

Authoring Tools Overview document

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Blue = description text in the tool overview written by me. In the final version, a sentence – few paragraphs should be written for every tool with this kind of introduction before the quotes.

Red = either comments or parts of the text I'm not sure about\to be revised in style and turned to regular (in the intro) or blue (in the overview) later

See short document for project introduction & explanation

(Make sure no important text that's not in the shortened version was deleted from the original intro here)

Tools Shortlist

Real-time-animation\game engines

All-purpose game engines

1. Corona GUI
2. Construct2
3. CooperCube5
4. Clickteam Fusion 2.5
5. CryEngine V
6. Amazon Lumberyard (based on CryeEngine)
7. GameMaker Studio 2
8. GODOT Game Engine
9. LOVE
10. Ogre3D Game Engine
11. Panda3D
12. Playcanvvas
13. Unity (Plugins: AdventureCreator, Cradle, Danesh, Fungus, Tidy Text Adventures, Vive VR Toolkit, Yarn\Yarn Spinner, PSST – mixed-initiative)
14. Unreal (and Blueprint mode)
15. Source (and GoldSource)
16. Shiva

Genre-specific game makers

17. AdventureGameStudios
18. Adventjure (Clojure)
19. Bitsy
20. Bladecoder Adventure Engine
21. CANVAS + SWB (Story World Builder)
22. Chatmapper
23. Ensemble
24. Game Salad
25. ITY Studio
26. One-Roll Engine
27. RPG in a Box
28. RPG Maker MV (and the Degica 'make'r series)
29. Stencyl
30. TIC 80
31. Tinsel
32. ToonTastic
33. Versu
34. Visionaire
35. Wolf RPG Editor

Dead

Comme-il-Faut

Scribe

Interactive Drama Architecture

Storybricks Engine

Hybrid text + graphic tools

Visual novel authoring tools

36. Omega Visual Nover Maker
37. Kirikiri\Kirikir Z
38. NScripter
39. Ren'Py
40. RenJS
41. RLDev
42. Tyranobuilder

Dead

Novelty

Other hybrid tools

43. ADEENGINE\the Adilebrum engine
44. ASAPS – Advanced Stories Authoring and Presentation System
45. DreamPath
46. Episode
47. Expressionist
48. Adobe Flash(Flex, FleshDevelop, PowerFlasher, Scaleform GfX)
49. The Gamebook Engine
50. IDTesnion
51. K-Sketch
52. NLBB – Non-linear Book Builder
53. Pubcoder 3
54. Scratch 2.0
55. Story Canvas
56. StoryStylus
57. Tracery
58. TWorld\Seltani
59. Wide Ruled 2.0

Dead

Adapt3D + ABAS

Authoring environment for structuring non-linear narratives (Schneider & co 2003)

Bowman-Zocal (Domain elaboration framework)

Emoemma

ENIGMA

FearNot! (FAtiMA)

PriSM

Scenejo

(Visual) SceneMaker (SOAP)

StoryTec

Wayang Authoring Tool

Interactive Fiction tools

Hypertext

60. Adrift

61. Alan
62. AXMA Story Maker
63. ChoiceScript
64. Erasmatazz Encounter Editor
65. Fractive
66. GEM (by CELTX)
67. HUGO
68. INK
69. InkleWriter
70. Literatonic\Liteartronica
71. Ramus
72. Satu Text Game Maker
73. Squiffy
74. Storealis
75. Story EXPLORER
76. StoryLab (Adventure Cow)
77. StorySpace (Eastgate)
78. TUVI
79. Twine

Dead

Connecton Muse

Recontre

Parser

80. Alexa Interactive Adventure Tool
81. ChooseYourStory
82. CurveShip
83. DINE – Data-driven Interactive Narrative Engine
84. Hypedyn
85. Inform7
86. Vorple (Inform7 environment)
87. Playfic (Inform7 environment)
88. INSTEAD – Interpreter for Simple Text Adventures
89. Quest
90. Salet
91. Storycentric
92. StoryNexus
93. TADS
94. Tale

95. TextureWriter
96. Varytale
97. XVAN Text Adventure Authoring System
98. ZILF

Dead

Gadin
MOE
StoryTron\SWAT
SUDS
Undum
Racontuer (Undum extension)

Interactive video\documentary tools

1. Adventr
2. Cunductrr
3. Creativsit
4. CtrlEdit\CtrlMovie
5. Explory
6. Exposure
7. FrameTail
8. InterludeTreehouse\EKKO
9. Korsakow
10. Klynt
11. MeoGraph
12. Metta
13. Odyssey
14. Pageflow
15. Popcorn Maker
16. RacontR
17. Rapt Media
18. StoryPlanet
19. ThinkLink
20. WireWax
21. Zeega

Dead video tools

Agent Stories

Djeouti

Jeherazade + HyPE

Hyper Hitchcock

AR\MR tools

1. AR-Core
2. ARis
3. ARKit
4. CHESS (personalized museum stories)
5. EDos
6. HoloKit
7. HP Reveal Studio
8. Mapxbox
9. _Motive.io
10. MR-IS – Mixed Reality Interactive Story-system
11. StoryScope (CURATE)
12. StoryPlaces
13. Voicemap
14. Wikitude Augmented Reality SDK

Sound Tools

15. IZI TRAVEL
16. Roundware
17. Voicemap

Dead

Art-E-Fact\Cyranus

“Immersive tools for tangible AR”

INSCAPE

MR-Based story composition tool

MuViPlan

StoryStream

UCreate

VR Tools

1. Cardboard Camera
2. Microsoft Holostudio
3. Microsoft Visual Studio
4. React VR (Facebook)
5. SceneVR
6. StorySphere
7. VivePort
8. VRDoodler
9. WebVR
10. Wonda

Dead VR tools

Acosas

Sub-lists

*finish filling these out

Academic tools (see other document for detailed list)

1. ASAPS
2. CHESS (MR)
3. Curveship
4. Dine
5. EXPRESSIONIST
6. Hypedyn
7. IDTension
8. Korsakow
9. Story Canvas
10. StorySpaces
11. StoryPlaces (AR)
12. Tracery
13. Wide Ruled 2.0

Dead

14. AdventureAuthor
15. Agent Storeis
16. ART-E-Fact/ Cyranus
17. Bowman/Zocalo
18. CrossTalk
19. DINAH

20. Dramachina
21. FearNot! (FAtiMA)
22. GADIN
23. Inscape
24. The authoring part of the IS engine
25. MOE
26. PRISM
27. Recontre
28. Scenejo
29. SceneMaker\Visual Scenemaker
30. SOAP (environment based on Scenemaker)
31. Scribe
32. Storybricks Engine
33. StoryStream
34. StoryTron\SWAT
35. StoryTec
36. U-Create

Academic procedural generation tools (partial list)

Defacto
Thespian
The Virtual Storyteller
ISRST-IS
Mimesis

Historical Tools

IF (by chronological order)

ZIL
Wander
Adventure Writing Kit
Dog Star Adventure
Eamon
The Adventure System
GAGS – Generic Adventure Generation System
Alan
PAW – Professional Adventure Writer
AdvSys
StorySpace (Eastgate)

TADS
HUGO
AGT – Adventure Game Toolkit

Visual Novel

AVG32\RealLive
Kirikiri
NScripter

Real-time Animation

Director
DreamWeaver
Hypecard
Shockwave
VideoWorks
SmartSketch
Future Splash Animator

Game Engines

The Arcade Machine
DIV Games Studio
Gomemaker
Game-Maker Suite
Garry Kitchen's GameMaker
Click&Play\The Game Factory (Clickteam)

Authoring tools main overview

The main ontological taxonomy of entirely code based tools is presented first, followed by further ontological categories of authoring tools who depend on additional source material.

A.I. Real-time-animation\game development tools

Possible typological subdivision: 3D vs 2D, VR\AR features, rough number of plugins available

All of these tools are currently alive, I wanted to focus on some historical real-time-animation\game-dev tools are listed below and can be integrated into this list if appropriate.

All-purpose Game Engines

Potentially good framework for a typology of game engines by basic interface type\complexity in WebsiteToolTester article: (Their most basic divide is between 2D and 3D engines)

<https://www.websitetooltester.com/en/blog/best-game-engine/>

[...] Roughly speaking, they offer 4 main kinds of features:

Full game templates: you basically get a ready-made game and you only change a few things. Import your own artwork or move a few sliders to change the colour of the sky, for example. **Wouldn't consider these to qualify for our definition.**

Drag and drop: very easy to use – no coding necessary. These let you implement certain events or properties by choosing them from a list. For example, you can add a “solid” property to a platform to make sure your character doesn't fall through it.

Visual scripting: these let you choose different functions that replicate code without having to script. They are more powerful than drag and drop engines and will require a bit more time. They are an excellent way to start understanding how code works without actually typing anything yourself.

Coding: some game engines use their own scripting language, and try and make it as easy as possible for beginners. It's a great way to learn how to code, especially if you want to later develop complex games. Others rely on well known scripting languages, and learning them will give you full control over your game, no matter how complex it is.

Conclusions of ToolTesterWebsite article on game-design tools for newcomers: “If you are more of a hobbyist, there is nothing wrong with choosing the easiest solution. But if you're interested in creating a studio and producing games in the long term, you should probably aim for an engine with a good reputation and skip our whole list straight to Unity or Unreal. You could even learn how to code by using them to gain complete control over your next games – a worthwhile investment.

[...]As you can see, the market for beginner game engines is a fierce battle ground, with new challengers popping up all the time. This is particularly the case in the world of mobile app games, where a lot of platforms want to offer you ready made solution, claiming that you can easily create the next App Store hit.

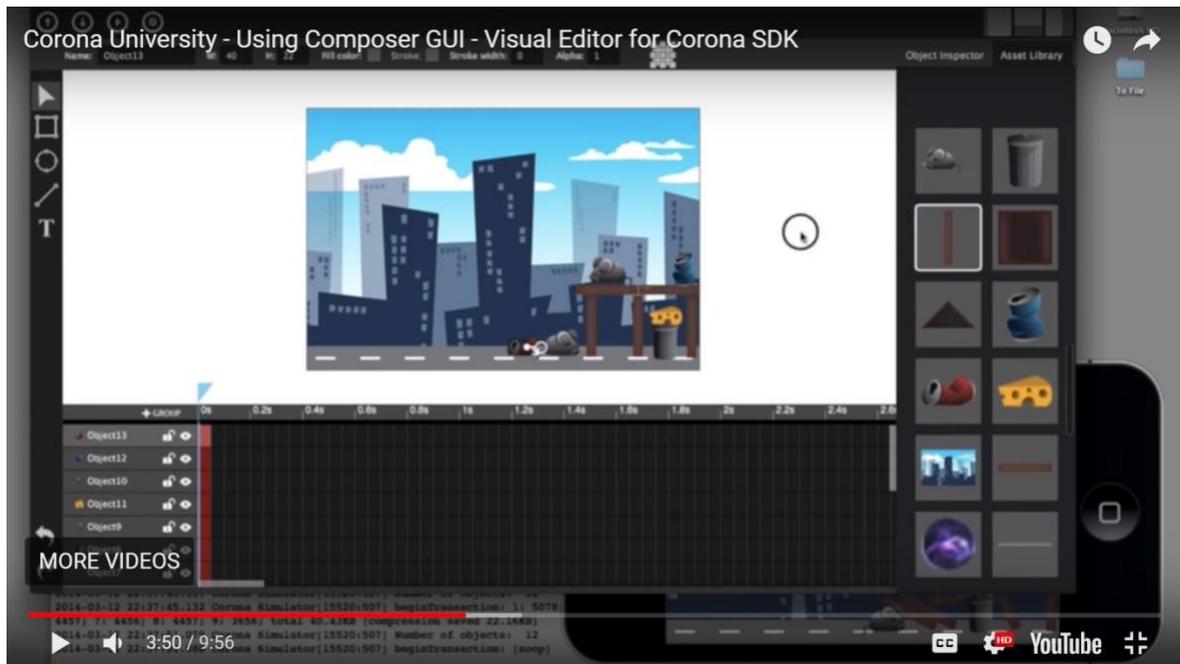
However, if you are serious about game development, the market is shrinking by the day. At the moment, it looks like **Unity and Unreal are the two main champions, and they are relied upon more and more by indie developers and AAA studios alike. Sure, the learning curve is a bit steeper, but once you get the hang of these products, you will truly feel like your next game can be anything you want.”**

1. Corona GUI

<https://coronalabs.com/blog/2014/04/17/composer-gui-beta/>

Youtube video tutorial: <https://www.youtube.com/watch?v=K8zLU-2wtYQ>

Coronalabs is an SDK (software dev kit) company, which launched a graphical user interface\ visual game editor in 2014. Still in beta, but seems both somewhat alive (15,000 views of tutorial, last software update 2 days ago) and quite narratively driven – though in a timelien-based environment. Potentially interesting for us. However, only available on for Corona subscribers and on Mac, and the forum is a dead link atm.



Today, we are seeding out a new product that we call the **“Composer GUI”**, a visual editor that allows you to rapidly create scenes, user interfaces, and game levels!

It allows you to visually design in a drag-and-drop GUI interface. And as the name suggests, the Composer GUI is designed to work in conjunction with the Composer API.

In addition, we designed the Composer GUI to be an integrated part of Corona Simulator. When you edit scenes in Composer, the Simulator automatically refreshes just like when you edit/save Lua files. You’ll also be able to preview individual scenes within Composer itself for even faster iteration.

As you can see, there are lots of great features. **For example, timeline animation and physics body editing will dramatically speed up your app development.**

First, it makes Corona even more accessible by allowing people with no coding experience to get up and running very quickly.

Second, it allows experienced developers to design UIs or levels in a fast and visual way and then refine/augment by further coding.

Third, it improves team workflow by allowing members like designers to lay a scene out visually before passing it on to developers.

To play with (and unlock) Composer GUI, you'll need to have a Pro (or higher) subscription.

Download daily build 2014.2264 (Mac only for now)

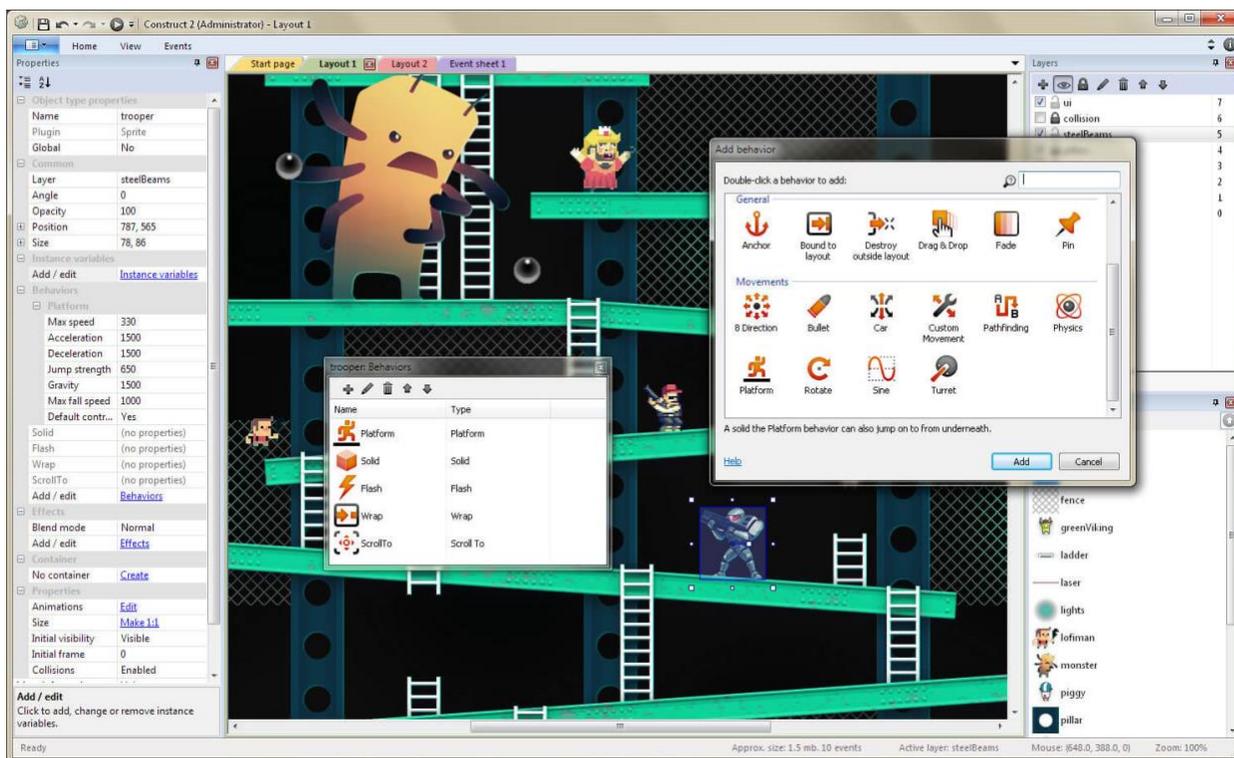
2. Construct 2

<https://www.scirra.com/construct2>

By Scirra, released 2013. (Construct 1 released 2011, version 3 announced January 2017). Written in C++

Easy-to-learn general purpose 2D engine with great graphics and UI.

Reflects the current situation of most WYSIWYG + model based design software: sacrificing some flexibility and complexity options (including making the engine 2D-only) for better and easier user-experience. From Hartmut's seminar, its clear that game design students are averse to these kind of engines that do away with coding almost all-together, but they can be a great entry point for non-game designers and if we consider platform games to be of some narrative potential, are quite handy in this sense. The easy-to-use event system seems particularly promising. Not sure about the extent of in-game text support here (can this make multiple choice dialogues, for example?).



“Construct 2 is a powerful ground breaking HTML5 game creator designed specifically for 2D games. It allows anyone to build games — no coding required!

It's great for beginners, and powerful enough to let experts work even quicker than by coding!

Indies and Hobbyists:

Use Construct 2 to enter the world of game creation.

Teachers and Students:

Teach the principles of programming in a fun and engaging way.

Designers and Artists:

Produce games without having to learn difficult languages.

Professional Developers:

Rapidly create mockups and prototypes, or use it as a faster alternative to coding.

Whoever you are, Construct 2 has many features to help you!

Quick & Easy

Bring your work to life in hours and days instead of weeks and months. With Construct 2 making games is a piece of cake: **just drag and drop objects around, add behaviors to them, and make everything come alive with events!**

With a quick and easy to grasp **Ribbon interface**, you have clear access to a wide set of tools that allows anyone to jump into game creation with little to no prior game development knowledge.

The Layout Editor provides a what-you-see-is-what-you-get visual interface to design your levels. You can drag, rotate and resize objects, visualize effects applied, and quickly change their settings to your liking in the Properties Bar. **Objects can be arranged on separate layers for enhanced organization, allowing advanced parallax and blending effects.** There's also a **built-in image editor** to conveniently make quick edits to your object's graphics.

[...]

Powerful Event System

Make your game do what it needs to do in a visual and human readable way with the powerful Event System. There's no need to memorize complicated and cryptic languages. With events programming becomes intuitive putting your focus on what really matters: designing your game!

Events are created by selecting possible conditions and actions from an organized list. The result list of events, or Event Sheet, is designed to be as easily readable as possible, so that beginners can get instant results as well. Entire event sheets can be re-used by other levels, saving you re-creating events for other levels.

Creating the events you need for your game is rather intuitive. Just choose the right object, select a condition or action, and add it to the event. Construct 2 helps you to learn how to think in a logical way and understand real programming concepts, making it easy for you if you decide to learn a programming language later.

Each event sheet has a list of events, which contain conditional statements or triggers. Once these are met, actions or functions can be carried out. Groups can be used to enable/disable multiple events at once, and for organisation in large projects. Advanced event logic such as OR blocks, sub-events, local variables and recursive functions allow for sophisticated systems to be programmed without learning a comparatively more difficult programming language.

Flexible Behaviors

Behaviors work as pre-packaged functions that you can assign to objects and reuse whenever needed. They provide an instant way to add capabilities to objects, speeding up development and increasing productivity.

They include movements such as 8 directions, platform, and car; advanced features like physics and pathfinding; and useful utilities like fade, flash, wrap, pin and drag & drop.

Most behaviors can be replicated with events, but it simply is far more time consuming to do so. That's why behaviors can be great time savers, without limiting what's possible when you need to go further.

For example, adding the Platform Behavior to a sprite allows you to immediately run and jump along objects marked as 'solid'. You can then change the settings for speed, acceleration, jump strength, gravity, and more, until it's behaving exactly the way you need.

Because of their ease of use they are great for beginners, who can get instant results. And they still make life easier for experienced users. For example, need an object to move and rotate with another object? Just add the Pin behavior! It literally only takes seconds, and all complications are removed.

Instant Preview

In Construct 2 you can preview your games instantly at any time. There's no need to wait for compiling or other time consuming processes. In the press of a button you get your game running in a browser window ready to be tested.

This allows for fast prototyping and iterative development which enables testing during the entire creation process, making a lot easier to detect and correct problems. This way game creation becomes a lot more intuitive, especially for beginners.

A great feature that makes testing a breeze is Preview Over Wifi. It allows any mobiles, tablets, laptops or other PCs connected on your LAN/Wifi to also instantly preview your project. This makes it extremely convenient to test games on devices like tablets and phones!

There's no limit on how many devices you can preview on LAN/Wifi - you can have several devices all previewing at the same time and simultaneously refresh them all, allowing you to quickly test on a range of devices. This feature is also invaluable for instantly checking if your touch events are working for touchscreen devices.

Stunning Visual Effects

Let your games go from good to gorgeous using C2's blend modes, effects and particle system.

There are over 70 WebGL-based pixel shader effects to warp, distort, blend, blur, mask, re-color and more. You can add these to objects, layers and layouts for quick special effects and also stack them up to create incredible results. You can even see everything applied in real time in the editor!

Construct 2 also allows you to setup fall backs to when effects support is not available, ensuring that players get the best possible experience out of your game. For example, a 'Screen' WebGL effect can be replaced by an 'Additive' blend mode when the player's computer does not support it, preserving the player experience as best as possible on a range of hardware and system setups.

Another great feature is the Particles plugin. It works by creating and moving many small images independently, easily generating sprays of sparkles, smoke, water, debris, and whatever more your imagination can create. It's a really versatile object capable of many different kinds of visual effects.

Multiplatform Export

Easily reach the web by publishing to your own website, Chrome Web Store, Facebook, Kongregate, NewGrounds, Firefox Marketplace or use our Scirra Arcade to share your creations. Export your game to desktop PC, Mac and Linux apps by using the Node-Webkit wrapper. Additionally publish to Windows 8 Store or as a native Windows Phone 8 app.

You can also reach the popular iOS and Android app stores using wrappers with built-in support.

With extensive platform support you can rest assured that players will have access to your game no matter where they are.

Easy Extensibility

Construct 2 comes with more than 20 built-in plugins, over 20 behaviors and more than 70 visual effects. They range from displaying text and sprites, sound and music playback, input, data manipulation and storage, particle effects, movement presets, Photoshop-like effects, and many more.

If you are a power user and still needs some specific functionality, Construct 2 let you create your own plugins and behaviors using our fully documented Javascript SDK. You can also create your own visual effects using GLSL shader language.

Our community has already produced more than 150 plugins and behaviors. It's really easy, there's no need for any special tools! All you need is a text editor and a little javascript or GLSL knowledge. It's also a great introduction to adding real programming to your games."

WebsiteToolTester article:

<https://www.websitetooltester.com/en/blog/best-game-engine/#construct>

"Construct 2 is a very intuitive drag and drop for creating 2D games. The learning curve is super fast, and the interface looks a lot like Microsoft products, so it makes it an ideal tool for PC users who have never looked at a game engine before. Sadly there is no Mac OS version, and games can only be exported as HTML5. This means that they need to be converted with a 3rd party service to work as native apps for Android or iOS, which comes at a cost in terms of performance. Similarly, games can be played on Windows, Mac OS, Linux, but only in web browsers.

Good for Notable examples

2D Racing The Next Penelope

2D Platformers Airscape, Super Ubie Island

2D Puzzle Games Mortar Melon

2D Arcade Games Cosmochoria

Pros:

Fast learning curve

Good support community

Regular updates

Free trial edition

Decently priced, starting at \$80

Marketplace for extra plugins

Cons:

Only works on PCs

HTML5 is limiting in terms of performance and flexibility”

Wikipedia entry: [https://en.wikipedia.org/wiki/Construct_\(game_engine\)](https://en.wikipedia.org/wiki/Construct_(game_engine))

Youtube intro: <https://www.youtube.com/watch?v=f-ZtBjFmmko>

3. CopperCube 5

<http://www.ambiera.com/coppercube/index.html>

By Ambiera, released 2017, Uniquely easy-to-learn and amateur-friendly, code-free, drag-and-drop interface 3D engine. Still new, relatively small-time and somewhat limited.

“CopperCube is an all-in-one 3D game engine.

Creates Windows and Mac OS X apps, WebGL apps / HTML 5 websites, Android apps and even Flash SWFs.

Extremely Easy to use

Create everything from simple model viewers to full 3D games. With just a few clicks.

No programming!

You can create games and apps without programming. But also supports scripting for advanced users.

Game proven

Lots of successful games have been created with CopperCube, and published on platforms like Steam

Great for FPS games

Ideal for creating first person shooters, walkthroughs, simulators or e-learning apps

Real game development

Perfect for beginners and pros. You can use scripts. You have access to the source code. Some platforms are even 100% free & open source.”

WebsiteToolTester article: <https://www.websitetooltester.com/en/blog/best-game-engine/#construct>

“Another basic engine that lets you click pieces together to create your 3D game. CopperCube 5 comes with a terrain editor and lets you import your 3D assets from elsewhere. Strangely enough, even though it’s not exactly powerful, it has **interesting support like the ability to export VR games for the Oculus Rift.**

Good for Notable examples

3D Survival Games PostCollapse

3D Multiplayer Platformer Painted Legend

Pros:

Easy to use

Visual editor

Terrain editor

Oculus Rift support

Exports to PC, Mac and Android

Cons:

Dated graphics

No console target

Lack of tutorials”

Youtube tutorial (for Coppercupe V3, the new version still lacks them):

<https://www.youtube.com/watch?v=RB186uVcx9Y>

Wikipedia: <https://en.wikipedia.org/wiki/CopperCube>

4. Clickteam Fusion 2.5

<https://www.clickteam.com/clickteam-fusion-2-5>

By Clickteam, released 2014. Version 3 is being developed.

All purpose, model-based, heavily templated and easy to learn 2D game-engine, based on amateur game-making tool The Games Factory created in 1994.

“Clickteam Fusion 2.5, or simply Fusion 2.5 is an upgrade from Clickteam featuring a highly optimised runtime and new exporters. It is the successor to Multimedia Fusion 2 and marks an end to the The Games Factory brand. Likewise with Multimedia Fusion 2, there are multiple editions of the software, sharing the same interface but have different runtime agreements and features.

“Clickteam Fusion 2.5

Game and software creation has never been easier or quicker than with Clickteam Fusion 2.5!

With Fusion 2.5's amazing event editor system you are able to quickly generate games or apps.

Within your first hour you will have learned the basics of the tool. Compile a windows app with a mouse click, Or target additional platforms like iOS, Android, Flash and XNA (Windows Mobile phone and Xbox) with the purchase of our optional exporters. Harness the power of Clickteam Fusion 2.5 today.

Clickteam Fusion 2.5 provides you with everything you need to start creating software. Just add your imagination!

CF2.5 takes full advantage of the Box2d physics engine, by intergating it into the movement property tab for most objects.

With Clickteam Fusion 2.5 there is no complex programming language to master. Learn the basics within an hour!

Clickteam Fusion 2.5 has a multitude of exporter options, giving you the ability to publish for multiple platforms.

With all Clickteam products you get outstanding community support for both new and veteran users alike.

Take advantage of hardware acceleration (subject to runtime used) to make your games and apps even faster.

The software is compatible with previously saved **MFA files**, but once saved, cannot be opened in MMF2. Most extensions will continue working without needing updates from the developer.”

WebsiteToolTester Article:

“Clickteam Fusion is the engine used by recent popular game such as The Escapists and Five Nights at Freddy’s. The amazing thing is that it’s been around since 1994! This means that it has an extremely active community of super dedicated fans who submit their own extensions and there is no shortage of documentation on the forums. It uses a visual editor, so you won’t need to type in any code, but you will need to learn what each function is. However, if you can do the maths, they released 2 ½ versions over more than 20 years, and you guessed it, they don’t update it as often as they should...

Good for Notable examples

2D Platformers Gravity Island

2D / 3D Survival Horror Five Nights at Freddy’s

2D Arcade Freedom Planet

Pros:

Drag and drop interface and visual editor

Exports to all platforms

Passionate and supportive multilingual community

Tons of extensions

Free version available – cheap license starting at \$75

Cons:

Dated interface

Windows version only

Little to no updates

Paying iOS, Android and Mac exporters”

Youtube tutorial: <https://www.youtube.com/watch?v=n1yiUpZbneU>

Similar previous tools by Clickteam:

The Game Factory 2 - <https://www.clickteam.com/the-games-factory-2> (see also ‘The Game Factory’ under historical tools)

Multimedia Fusion 2 - <https://www.clickteam.com/multimedia-fusion-2>

5. Cryengine V

<http://www.crytek.com/cryengine/cryengine3/overview>

By Crytec, first version published on 2002, Cryengine V released 2016. Currently gaining as a VR, complex 3D, and multi-console (rather than just platform) development engine. Seems far less amateur-friendly than other engines.

Wikipedia entry:

<https://en.wikipedia.org/wiki/CryEngine>

CryEngine is a [game engine](#) designed by the [German](#) game developer [Crytek](#). It has been used in all of their titles with the initial version being used in *Far Cry*, and continues to be updated to support new consoles and hardware for their games. It has also been used for many third-party games under Crytek's licensing scheme, including *Sniper: Ghost Warrior 2* and *SNOW*. [Warhorse Studios](#) uses a modified version of the engine for medieval RPG *Kingdom Come: Deliverance*. [Ubisoft](#) maintains an in-house, heavily modified version of CryEngine from the original *Far Cry* called the [Dunia Engine](#), which is used in their later iterations of the *Far Cry* series.

According to various anonymous reports in April 2015, CryEngine was licensed to Amazon for \$50–70 million.^[7] Consequently, in February 2016, Amazon released its own reworked and extended version of CryEngine under the name of [Amazon Lumberyard](#).^{[8][9]}

“The Complete Game Development Solution

CryENGINE® 3 is a highly advanced development solution that surpasses all expectations for the creation of blockbuster games, movies, high-quality simulations, and interactive applications. **The third iteration of Crytek's proprietary engine is the only all-in-one game development solution for the PC, Xbox 360™, and PlayStation®3 that is truly groundbreaking in itself.**

[...]You are the director! Learn more about our efficient tools that enable the fastest development of game environments and gameplay available on PC, PlayStation® 3, and Xbox 360™. **Experience our “What you see is what you play” and our “Live Create” features, enabling real-time editing of multi-platform game environments simultaneously, both in 2D and true stereoscopic 3D.** Cross-platform development has never been so easy!”

[...]Advanced Modular AI System

Realistically rendered and animated characters require state-of-the-art AI systems to intelligently respond to the game environment and maintain the illusion of realism. **CryENGINE 3 features powerful, scalable, and flexible AI technology to handle character behaviors with modular sensory systems, such as sight and hearing, and fully support the complex requirements of the character locomotion system**

[...]CryENGINE 3 also **introduces Live Create™: simultaneous WYSIWYP on all platforms. This allows developers to work with a single editor, but see and play the results in real-time on PC, PlayStation®3, and Xbox 360™, hooked up to a single dev PC. The engine takes care of the conversion and optimization of assets in real-time**, enabling instant, cross-platform changes to any part of game creation and, as a result, materially increasing the speed and quality, while significantly reducing the risk of multi-platform development.

<http://www.moddb.com/engines/cryengine-3>

“CryENGINE®3 is the first PC, Playstation®3, and Xbox 360™ all-in-one game development solution that is Next-Gen ready with scalable computation and graphics technologies. Using the CryENGINE®3, you can start the development of your next generation games today. CryENGINE®3 is the only game engine that provides multi-award winning graphics, state-of-the art lighting, physics and AI, out of the box.

The famous CryENGINE®3 Sandbox™ editor is a production proven, third-generation real-time tool suite designed and built by AAA developers. CryENGINE®’s powerful real-time renderer is now even better! DirectX 11 (DX11) support significantly enhances the capabilities of the renderer within CryENGINE®3, allowing for some of the best visuals ever seen.

Below, you'll find just a fraction of the features available in CryENGINE®3!”

6. Amazon Lumberyard

<https://aws.amazon.com/lumberyard/>

“Free. Powerful. Fully Customizable.

We believe game developers deserve another choice. That's why we're building Lumberyard: a game engine with no royalties or seat fees, frictionless integration with Twitch and AWS, plus much more on the horizon."

Wikipedia page:

https://en.wikipedia.org/wiki/Amazon_Lumberyard

"Amazon Lumberyard is a free cross-platform triple-A game engine developed by Amazon and based on the architecture of CryEngine, which was licensed from Crytek in 2015.[3][4][5] The engine features integration with Amazon Web Services to allow developers to build or host their games on Amazon's servers, as well as support for livestreaming via Twitch.[6] Additionally, the engine includes Twitch ChatPlay, where viewers of the Twitch stream can influence the game through the associated chat, a method of play inspired by the Twitch Plays Pokémon phenomenon. Lumberyard launched on February 9, 2016 alongside GameLift, a fee-based managed service for deploying and hosting multiplayer games, intended to allow developers to easily develop games that attract "large and vibrant communities of fans." [9] As of February 2017, the software is currently in beta and can be used to build games for Microsoft Windows, PlayStation 4, Xbox One,[10][9] with limited support for iOS and Android, and support for Linux and Mac coming as well.[8][11] Virtual reality integration was added in Beta 1.3, allowing developers to build games supporting devices like Oculus Rift and HTC Vive.[12][13]

On August 16, 2017, the source code of the engine was made freely available under proprietary license terms via GitHub.[15][16]

Used to make a bunch of game that are still under development (this is a very new engine). Not yet used by many amateur\indie users it seems, triple A for now but Amazon is bound to want to change that, and interesting to follow where this one goes.

<http://www.gamesindustry.biz/articles/2017-05-05-amazon-lumberyard-one-year-on>

Review article published May 2017.

7. GameMaker Studio 2

<https://www.yoyogames.com/gamemaker/features>

By YoYo games, released 2017. Combines being relatively easy to learn and amateur friendly with support for coding, 3D games, and more complex interfaces.

WebsiteToolTester article:

"What do games like Hotline Miami, Undertale and Hyper Light Drifter have in common? Yes, they all sold millions of copies, and they were all made using GameMaker Studio. **This powerful simplified code engine supports both 2D and 3D, but is more often used for 2D projects. One big advantage is that it lets you create all the assets for your game so you can quickly see how things look** (of course you can

also import them from Photoshop or anywhere else). **The drag and drop interface also makes it ideal for quick prototyping, even for advanced game developers.**

Good for Notable examples

2D Siderscrollers Death's Gambit

2D Roguelikes Hyper Light Drifter

2D Point & Click Games Fran Bow

2D Arcade Games Downwell

Pros:

Fairly fast learning curve

Free trial and decent price tiers (\$99 to \$399 one of fee)

Advanced features

Great for artists

Good marketplace

Great tutorials and resources

Cons:

Costs extra to export for certain platforms such as Android or iOS

Not fully drag and drop – you need to learn some basic code

Own scripting language called Game Maker Language – if you learn how to script in GMS2, you will be limited”

From Wikipedia entry:

https://en.wikipedia.org/wiki/GameMaker_Studio

“GameMaker Studio (formerly Animo until 1999, Game Maker until 2011, GameMaker until 2012, and GameMaker: Studio until 2017) is a proprietary game creation system created by Mark Overmars in the Delphi programming language.[1]

GameMaker accommodates the creation of cross-platform and multi-genre video games using drag and drop action sequences or a sandboxed scripting language known as Game Maker Language, which can be used to develop more advanced games that could not be created just by using the drag and drop features. GameMaker was designed to allow novice computer programmers to be able to make computer games without much programming knowledge by use of these actions.

GameMaker primarily runs games that use [2D graphics](#), allowing the use of limited [3D graphics](#).^[4]

GameMaker is designed to allow its users to easily develop [video games](#) without having to learn a complex [programming language](#) such as [C++](#) or [Java](#) through its proprietary [drag and drop](#) system.^{[5][6]} These icons represent actions that would occur in a game, such as movement, basic drawing, and simple control structures. It is also possible to create custom "action libraries" using the Library Maker. **Game Maker Language** (GML) is the primary interpreted [scripting language](#) used in GameMaker, which is usually significantly slower than compiled languages such as [C++](#) or [Delphi](#).^[7]

GameMaker accommodates redistribution on multiple platforms.^[8] The program builds for these platforms: [Microsoft Windows](#), [macOS](#), [Ubuntu](#), [HTML5](#), [Android](#), [iOS](#), [Windows Phone](#), [Tizen](#), [Xbox One](#), [PlayStation 4](#) and [PlayStation Vita](#)

From official site, GameMaker Studio 2 features list includes (trimmed down list):

“MULTIPLATFORM WORKFLOW

Using a single development workflow GameMaker Studio 2 allows you export your game directly to Windows desktop, Mac OS X, Ubuntu, Android, iOS, fireTV, Android TV, Microsoft UWP, HTML5, PlayStation 4, and Xbox One.

Object Editor

With our unique structure and workflow it has never been easier to manage the objects within your game.

Script Editor

With tabs and the ability to split the editor you can work with multiple files without having a window for each.

DRAG AND DROP

User our intuitive Drag and Drop (DnD™) system to begin your game development journey. Learning how to make a game is easier than ever.

Superior Workflow

Drag and Drop like never before, create the game you want without ever writing any code.

Library

Choose what you need from our extensive library of events and actions to sculpt the game you desire.

Code Preview

Learn how to program by viewing the code behind our DnD™ actions and take your games to the next level.

GameMaker Language

Based on C programming language, GML gives you all the power of other programming languages while being easy to learn.

Layers

Take control of how objects are ordered within your rooms and draw sprites directly without the need for an object.

Inheritance

Add variety quickly to your projects by sharing common code and resources.”

<http://www.pcgamer.com/gamemaker-the-making-of-gamings-most-user-friendly-design-tool/>

“The most user-friendly design tool”, according to this PCGamer piece

<http://indiegamemag.com/gamemaker-studio-lord-over-the-pixels/>

Indie Game Magazine article calls the tool “lord over the pixels”

Beginner resources in the GameMaker subreddit:

https://www.reddit.com/r/gamemaker/comments/3lyoik/game_maker_handbook_resources_for_beginners_an/

<https://docs2.yoyogames.com/>

Tutorial document

<https://www.youtube.com/watch?v=cEb4gzG8S24>

Youtube tutorial

<https://yellowafterlife.itch.io/gmedit>

GMEdit – code editor for GMS

8. GODOT Game Engine

<https://godotengine.org/>

Fully open-sourced engine, developed by a community of volunteers and realised on 2014.

Wikipedia

[https://en.wikipedia.org/wiki/Godot_\(game_engine\)](https://en.wikipedia.org/wiki/Godot_(game_engine))

Godot is a 2D and 3D [cross-platform](#) compatible [game engine](#) released as [open source](#) software under the [MIT license](#). It was initially developed for several companies in [Latin America](#) before its public release.^[2] The development environment runs on [Windows](#), [macOS](#), [Linux](#), [BSD](#) and [Haiku](#) (both [32](#) and [64-bit](#)) and can create games targeting [PC](#), [console](#), [mobile](#) and [web](#) platforms.

Godot aims to offer a fully integrated game development environment. It allows developers to create a game from scratch needing no other tools beyond those used for content creation (art assets, [music](#) etc.). **The architecture is built around a concept of a tree of nested "scenes"**. All game resources, from scripts to graphical assets, are saved as part of the computer's [file system](#) (rather than in a [database](#)). This storage solution is intended to make it easier for game development teams to collaborate on script code using [version control](#).^[3]

Interesting choice there – do “scenes” make the spatial interface (as this is still far from a timeline-based structure) more narrative-oriented?

The engine supports deployment to multiple platforms, and allows specification of texture compression and resolution settings for each platform. Currently supported platforms include [Windows](#), [macOS](#), [Linux](#), [FreeBSD](#)^[4] / [DragonFly BSD](#)^[5], [Android](#), [iOS](#), [BlackBerry 10](#) and [HTML5](#)^[6]. There is also work-in-progress support for [Windows Runtime](#).^[7]

Scripting[edit]

Godot games are created either in [C++](#) or by using its own [scripting language](#), [GDScript](#), a [high level, dynamically typed programming language](#) very similar to [Python](#). Contrary to Python, GDScript features strict typing of variables and is optimized for Godot's scene-based architecture. Godot's developers have stated that many alternative third-party scripting languages (namely, [Lua](#), [Python](#) and [Squirrel](#)) were tested before deciding that using a custom language allowed for superior optimization and editor integration.^[8]

The engine's editor includes a script editor with [auto indentation](#), [syntax highlighting](#) and [code completion](#). It also features a [debugger](#) with the ability to set [breakpoints](#) and [program stepping](#).

[...] History

Godot development was started by Juan 'reduz' Linietsky and Ariel 'punto' Manzur in 2007.^{[1][12]} Linietsky stated in a presentation that the name Godot was chosen due to its relation to [Samuel Beckett's](#) play *Waiting for Godot*, as it represents the never-ending wish of adding new features in the engine, which would get it closer to an exhaustive product, but never will.^[13] In February 2014, the [source code](#) for Godot was released to the public on [GitHub](#) under the [MIT License](#).^[14]

On 15 December 2014, Godot reached version 1.0, marking the first [stable](#) release and the addition of [lightmapping](#), [navmeshsupport](#) and more [shaders](#).^[15] [..]

Godot 2.0 reached stability on 23 February 2016. New features included better scene instancing and inheritance, a new filesystem browser, multiple scene editing, and an enhanced debugger.^{[18][2]} This was followed by version 2.1 in August 2016, which introduced an asset database, profiler, and plugin API.^[19]

On 22 June 2016, Godot received a \$20,000 [Mozilla](#) Open Source Support (MOSS) “Mission Partners” award to be used to add [Web Sockets](#), [WebAssembly](#) and [WebGL](#) 2.0 support.^[6]

Version 3.0 was released on 29 January 2018, adding improved 3D rendering, VR compatibility, and C# (via Mono) support.^[10] **It also replaced the engine's former built-in 3D physics backend with the [Bullet](#) physics engine.**

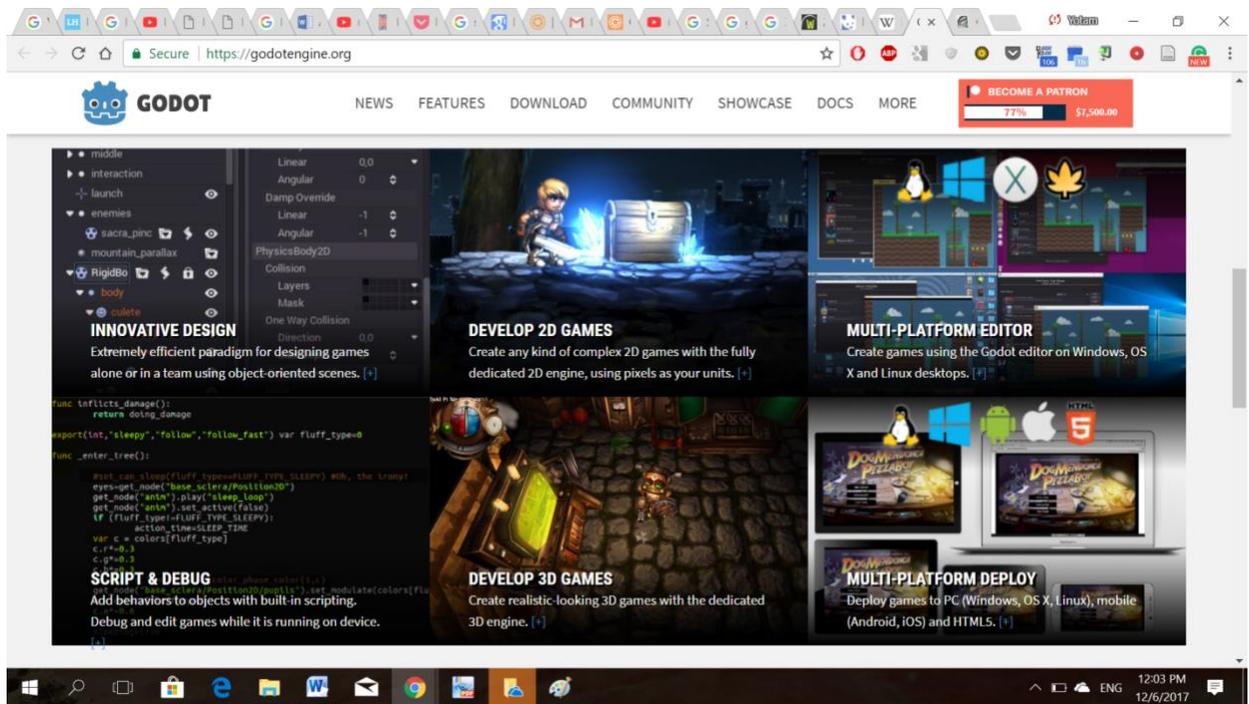
[...] Usage

Many games by OKAM Studio have been made using Godot, including *Dog Mendonça & Pizza Boy*, which uses the Escoria adventure game extension.^[20] Additionally, it has **been used in [West Virginia's](#) highschool curriculum, due to its ease-of-use for non-programmers and what is described as a "wealth of learning materials that already exist for the software".**^[21]

From official site:

“Godot is an advanced, feature-packed, multi-platform 2D and 3D open source game engine”

Developed by a community of developers and small companies, and seems to be gaining popularity. Perhaps the interface is differently thought-out than in the far more popular Unity and Unreal that originated from large game companies?



Godot provides a huge set of common tools, so you can just focus on making your game without reinventing the wheel.

Godot is completely free and open source under the very permissive MIT license. No strings attached, no royalties, nothing. Your game is yours, down to the last line of engine code.

Github page - <https://github.com/godotengine/godot>

9. LOVE

<https://love2d.org/>

Popular (for hobbyists) small-scale 2D engine intended for creating games with the Lua programming language.

“LÖVE is an *awesome* framework you can use to make 2D games in Lua. It's free, open-source, and works on Windows, Mac OS X, Linux, Android and iOS.

It costs nothing.

You can use it freely for commercial purposes with no limitations.

The source can be found on Bitbucket.

Community

If you get stuck, many friendly people are ready to help you at the forums. Be warned, however, that it sometimes gets too friendly.

People also post their games and projects on the forums, so it's a nice way of exploring what LÖVE can do. Or at least what people choose to use it for.

There is also an IRC channel #love@irc.oftc.net and a Discord server

Examples

It's pretty easy to get started with LÖVE, just check out these code snippets.

Games

LÖVE has been used for commercial projects, game jams, prototyping, and everything in between.

Example games: Warlock's Tower, Move or Die, Oh My Giraffe, MetaNet Hunter"

Lua's official site: <https://www.lua.org/>

"Lua is a powerful, efficient, lightweight, embeddable scripting language. It supports procedural programming, object-oriented programming, functional programming, data-driven programming, and data description.

Lua combines simple procedural syntax with powerful data description constructs based on associative arrays and extensible semantics. Lua is dynamically typed, runs by interpreting bytecode with a register-based virtual machine, and has automatic memory management with incremental garbage collection, making it ideal for configuration, scripting, and rapid prototyping."

Forum: <https://love2d.org/forums/>

Wiki: https://love2d.org/wiki/Main_Page

Discord page: <https://discordapp.com/invite/rhUets9>

10. OGRE3D Game Engine

<https://www.ogre3d.org/>

Released in 2005 by The OGRE Team

Cross Platform Support

OGRE supports Windows (all major versions), Linux, OSX, Android, iOS, Javascript (via EMScripten), Windows Phone (Sponsored by Microsoft) and WinRT. Furthermore OGRE was ported to PS3 and Xbox360 for several titles.

Open source (MIT License)

Ogre is released under the MIT License, which is a permissive open source license. The only condition is that you distribute the license text included in our distribution with any software that uses OGRE.

From 'about' page: "Productivity features

Simple, easy to use OO interface designed to minimise the effort required to render 3D scenes, and to be independent of 3D implementation i.e. Direct3D/OpenGL. Extensible example framework makes getting your application running is quick and simple
Common requirements like render state management, spatial culling, dealing with transparency are done for you automatically saving you valuable time
Clean, uncluttered design and full documentation of all engine classes
Proven, stable engine used in several commercial products

[...]Scene Features

Highly customisable, flexible scene management, not tied to any single scene type. Use predefined classes for scene organisation if they suit or plug in your own subclass to gain full control over the scene organisation

Several example plugins demonstrate various ways of handling the scene specific to a particular type of layout (e.g. BSP, Octree)

Hierarchical scene graph; nodes allow objects to be attached to each other and follow each others movements, articulated structures etc

Multiple shadow rendering techniques, both modulative and additive techniques, stencil and texture based, each highly configurable and taking full advantage of any hardware acceleration available. Scene querying features"

Wiki - <http://wiki.ogre3d.org/Home>

Forum - <https://forums.ogre3d.org/>

Manual - <https://ogrecave.github.io/ogre/api/1.10/manual.html>

11. Panda3D

<https://www.panda3d.org/>

Released 2002 by Disney Interactive and Carnegie Mellon University – **interesting cooperation there**

"Panda3D is a game engine, a framework for 3D rendering and game development for Python and C++ programs. Panda3D is Open Source and free for any purpose, including commercial ventures, thanks to its liberal license. Go ahead and grab it here. To learn more

about Panda3D's capabilities, visit the gallery and the feature list. To learn how to use Panda3D, check the documentation resources. If you get stuck, ask for help from our community, which is very active.”

<https://en.wikipedia.org/wiki/Panda3D>

“**Panda3D** is a [game engine](#) that includes graphics, audio, I/O, [collision detection](#), and other abilities relevant to the creation of 3D games.^[1] Panda3D is free software under the revised [BSD license](#).

Panda3D's intended game-development language is [Python](#). The engine itself is written in [C++](#), and utilizes an automatic wrapper-generator to expose the complete functionality of the engine in a Python interface. This approach gives a developer the advantages of Python development, such as rapid development and advanced memory management, but keeps the performance of a compiled language in the engine core. For instance, the engine is integrated with Python's garbage collector, and engine structures are automatically managed.

The manual and the sample programs use Python, although the developers are working on translating the manual to C++ and providing C++ sample programs. A developer using Panda3D typically writes code in Python, but it is also possible to directly access the engine using C++ code.

The users of Panda3D include the developers of several large commercial games, a few open source projects, and a number of university courses that leverage Panda3D's short learning curve. The community is small but active, and questions on [the forum](#) are generally answered quickly.

[...]Panda3D is a [scene graph](#) engine.^[2] This means that the virtual world is initially an empty [Cartesian](#) space into which the game programmer inserts 3D models. Panda3D does not distinguish between "large" 3D models, such as the model of an entire dungeon or island, and "small" 3D models, such as a model of a table or a sword. Both large and small models are created using a standard modeling program such as [Blender](#), [3ds Max](#), or [Maya](#). The models are then loaded into Panda3D and inserted into the Cartesian space.”

[...] History

The Disney VR studio is a branch of Disney that was created to build 3D attractions for Disney theme parks. They built an attraction called "Aladdin's Magic Carpet," and the engine they created for that eventually became Panda3D. The engine in its current form bears little resemblance to those early years. Over time, Panda3D was used for additional VR rides at Disney theme parks, and was eventually used in the creation of [Toontown Online](#), an online game set in a cartoon world, and later for the second [MMORPG](#), [Pirates of the Caribbean Online](#).^[4]

In 2002, the engine was released as open source. According to the authors, this was so that they "could more easily work with universities on Virtual Reality research projects."^[5] However, it took some time for Panda3D to take off as an open-source project. From the article:

The system, although quite usable by the team that developed it, was not quite "open source ready." There were several interested users, but building and installing the system was incredibly complex, and there was little in the way of documentation or sample code, so there was no significant open source community right away.

However, **the open-sourcing of the engine allowed Carnegie Mellon's Entertainment Technology Center to join in the development of the engine. While Disney engineers continued to do the bulk of the development, the Carnegie-Mellon team built a role for itself polishing the engine for public consumption, writing documentation, and adding certain high-end features such as shaders.**

Manual - https://www.panda3d.org/manual/index.php/Main_Page

Forums - <https://www.panda3d.org/forums/index.php>

12. Playcanvas

<https://playcanvas.com/explore/featured>

New tool for browser-based, high-level game design, uniquely fitting for cooperative authoring process and long-distance teamwork.

WebsiteToolTester article defines it as “like Unity’s younger sibling – lightweight and cloud based – very focused on team game development”.

“Beautiful interactive experiences for every platform

Browser games are no longer limited to 2D. Use PlayCanvas to create 3D HTML5 and WebGL games that will amaze.

Engaging Advertising

PlayCanvas allows creatives and coders to create Rich Media Ads that run everywhere.

Reach your audience wherever they are, on mobile, desktop, social media or even instant messengers.

Open Source

PlayCanvas is a free and open source engine. Easy to pick up for beginners, powerful for experts. Our transparent development process is better for everyone.

PlayCanvas Editor

Built on our open source technology our tools make it fast and cheap for you to create content. From complex games to simple product demos.”

Github page: <https://github.com/playcanvas/engine>

Forum: <http://forum.playcanvas.com/>

Written tutorials: <https://developer.playcanvas.com/en/tutorials/>

Youtube tutorial: <https://www.youtube.com/watch?v=fXc-JjH2nNo>

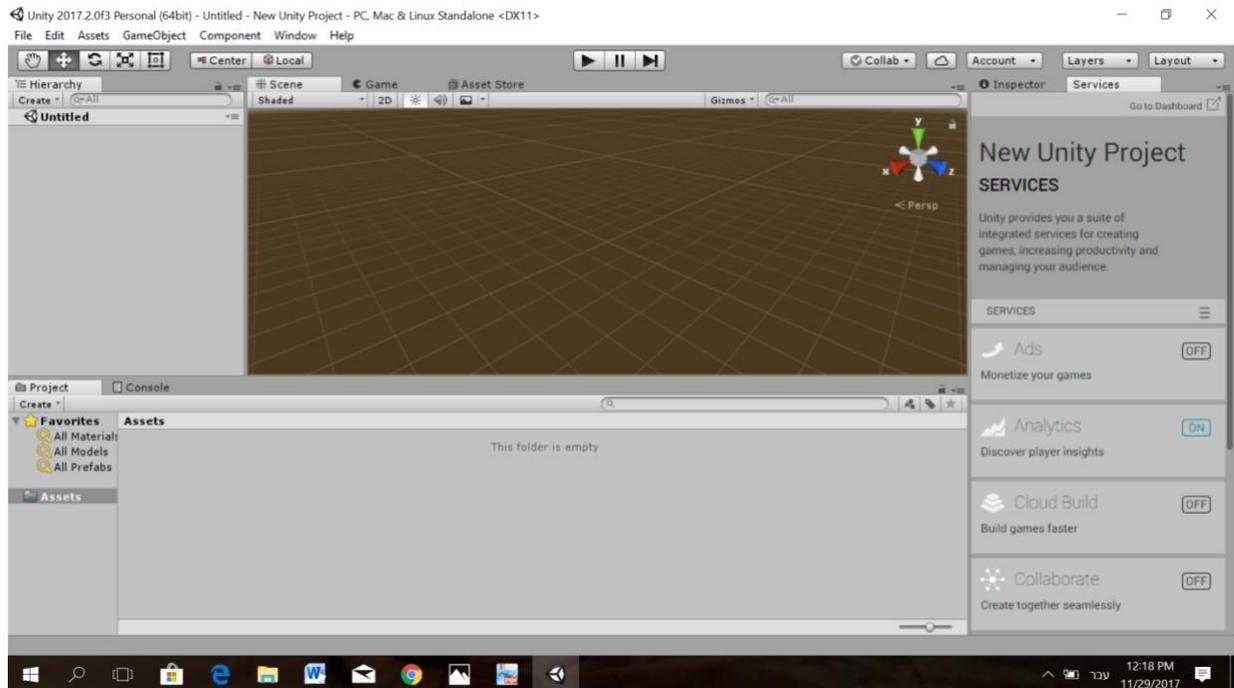
13. Unity

<https://unity3d.com/>

“The leading global game industry software”

Unity seems crucial to consider because it is by far the most commonly used game design software, also leads the AR\VR\MR and facilitates more embodied interfaces, and is more non-programmer friendly than Unreal. Though most of the discourse does not touch upon narrative, Unity seems like a great, expandable platform for interactive narrative design. As it is open source, assets such as Fungus facilitate narrative design more explicitly. (See Fungus and other narrative-inclined tools below)

If we don't just count the narrative-centred works, more 'alive' than possibly other tools on this list together. Unity is the most popular tool of choice among game design students, even when they design narratives (as in Hartmut's seminar), as they enjoy the program's immense flexibility and like to stick to what they know. Unity's high level graphical support, spatial interface, and popularity in the VR scene also make it particularly interesting in the context of our interest in embodied and/or abstract narrative experience, that emerges from the phenomenology of gamespace rather than some well-established classical plot. Given the overwhelming size and diversity of its community, the uniquely high number of plugins and assets, and its developed tutorial and community discussion and support structure, it is in our\my opinion an auto-include on any list of most currently-relevant IDN tools.



“Unity plays an important part in a booming global games market. **More games are made with Unity than with any other game technology. More players play games made with Unity, and more developers rely on our tools and services to drive their business.**

This has resulted in global gamers **downloading Unity-made games to nearly 2 billion unique mobile devices** for Q1 2016 alone.”

Thirty-four percent of top (**mobile**) games are made with Unity

The Unity game engine is far more popular amongst developers than any other third-party game development software. The proportion of developers relying on Unity as their primary development tool and using Unity is growing all the time.”

<https://www.gameskinny.com/hsiv5/interview-with-a-developer-javier-cabrera-of-cabrera-brothers-creators-of-cypher>

Article on Cypher – a text-adventure game developed on Unity

WebsiteToolTester article:

“The serious gamedev platform

Ready to join the big leagues? This is where the action happens. Unity, the game engine developed by Unity Technologies targets **27 platforms** including the latest consoles such as the Switch and all mobile phones. **This San Francisco company (who started in Denmark) now has more than 5 million registered developers who use the engine on a monthly basis.**

While it is an extremely powerful platform that favours coders, there are a number of solutions for beginners who want to use visual scripting instead. These are all paying, but should give you all the tools you need to get started. If this is the road you want to take, you should therefore look at investing in **beginner friendly plugins such as FlowCanvas, uScript, Adventure Creator or PlayMaker.**

| Good for | Notable examples |
|-------------------------------|----------------------------|
| 3D Space Simulators | Kerbal Space Program |
| 3D RPGs | Wasteland 2 |
| 3D Survival Action Adventures | Rust |
| 3D Endless Runners | Temple Run |
| 3D Action RPGs | Assassin's Creed: Identity |

Pros:

- One of the best Asset Stores with tons of free assets
- Excellent resources and tutorials
- Use it for free until you make more than \$100K from your games
- Exhaustive list of platforms supported
- Good for learning C#
- Popular with indie developers

Cons:

- Overwhelming for beginners
- Need paid plugins to avoid scripting
- Not the best toolkit for 2D games
- Self-centered engine – Unity users can't really apply their skills anywhere else"

Unity's Wikipedia entry

[https://en.wikipedia.org/wiki/Unity_\(game_engine\)](https://en.wikipedia.org/wiki/Unity_(game_engine))

Unity is an multipurpose game engine that supports 2D and 3D graphics, drag and drop functionality and scripting using C#. Two other programming languages were supported: Boo, which was deprecated with the release of Unity 5^[8] and UnityScript which started its deprecation process in August 2017 after the release of Unity 2017.1.^[9]

The engine targets the following **graphics APIs: Direct3D on Windows and Xbox One; OpenGL on Linux, macOS, and Windows; OpenGL ES on Android and iOS; WebGL on the web; and proprietary APIs on the video game consoles.**

Within 2D games, Unity allows importation of sprites and an advanced 2D world renderer. For 3D games, Unity allows specification of texture compression and resolution settings for each platform that the game engine supports,^[6] and provides support for bump mapping, reflection mapping, parallax mapping, screen space ambient occlusion (SSAO), dynamic shadows using shadow maps, render-to-texture and full-screen post-processing effects.^[10] Unity also offers services to developers, these are: Unity Ads, Unity Analytics, Unity Certification, Unity Cloud Build, Unity Everyplay, Unity IAP, Unity Multiplayer, Unity Performance Reporting and Unity Collaborate.

Unity is notable for its ability to target games for multiple platforms. The currently supported platforms are Android,^[11] Android TV, Facebook Gameroom, Fire OS, Gear VR, Google Cardboard, Google Daydream, HTC Vive, iOS, Linux, macOS, Microsoft HoloLens, Nintendo 3DS family,^{[12][13][14]} Nintendo Switch,^[15] Oculus Rift, PlayStation 4, PlayStation Vita, PlayStation VR, Samsung Smart TV, Tizen, tvOS, WebGL, Wii U, Windows, Windows Phone, Windows Store, and Xbox One.

Unity formerly supported 7 other platforms including its own Unity Web Player. **Unity Web Player was a browser plugin that was supported in Windows and OS X only,**^[16] **which has been deprecated in favor of WebGL.**^[3]

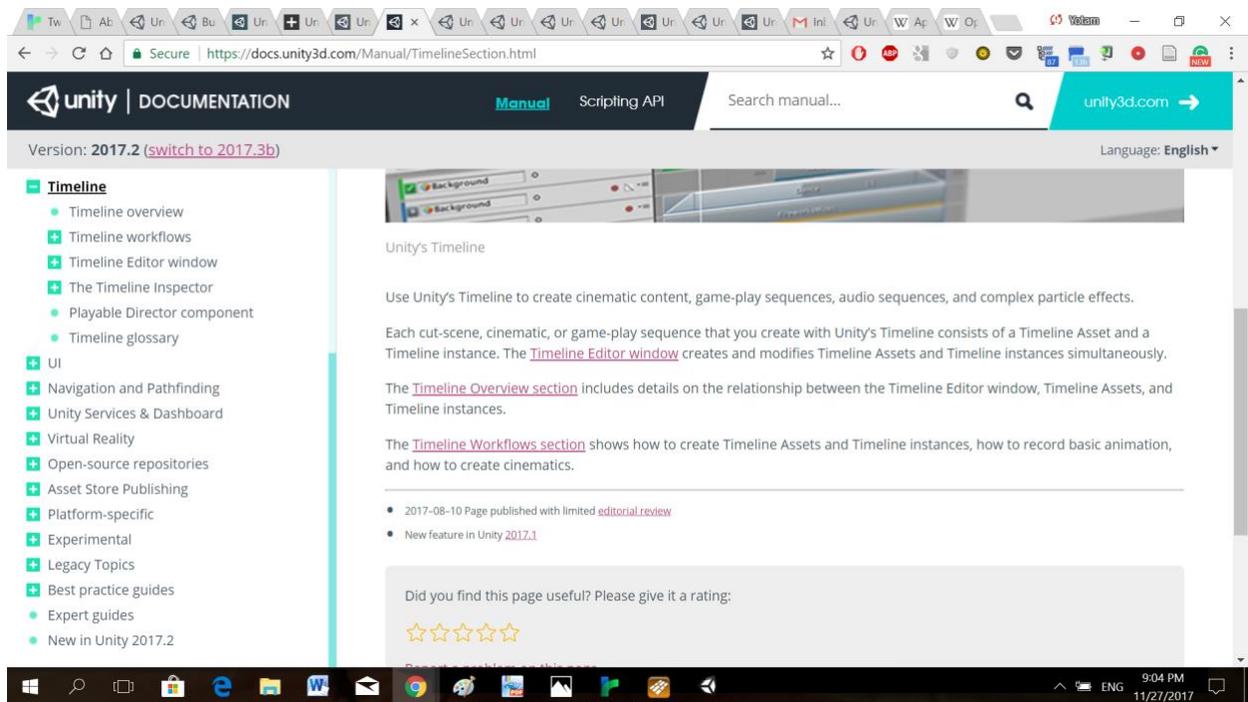
Unity is the default software development kit (SDK) for Nintendo's Wii U video game console platform

History

[...] Unity 5 was met with similar praise, with *The Verge* stating that "**Unity started with the goal of making game development universally accessible.... Unity 5 is a long-awaited step towards that future.**"^[24]

Following the release of Unity 5, Unity Technologies drew some criticism for the high volume of quickly produced games published on the Steam distribution platform by inexperienced developers.^[25] CEO [John Riccitiello](#) said in an interview that he believes this to be a side-effect of Unity's success in democratizing game development: "If I had my way, I'd like to see 50 million people using Unity – although I don't think

we're going to get there any time soon. I'd like to see high school and college kids using it, people outside the core industry. I think it's sad that most people are consumers of technology and not creators.”



Forum discussion from 2009: “is Unity an authoring tool rather than an engine?”

<https://forum.unity.com/threads/is-unity-an-authoring-tool-rather-than-an-engine.19374/>

‘Official’ response by one of the company workers: Yes, Unity indeed is much more like a tool (think Flash) than the traditional "middleware engine".

This is just part of our philosophy - we see Unity as a tool. We do not limit it to any single game genre (or game at all), and we do provide enough hooks and APIs for you to do "lots of different stuff", but Unity is still primarily a tool. For example, using Unity as a rendering engine, Hammer as level editor, Havok as physics engine and Gamebryo for asset management is not really a situation that's easily possible (well, it is probably possible with a source code license).”

General unofficial tutorial (there are hundreds): <https://www.youtube.com/watch?v=g5QFW12utdU>

VR tutorials (part of hundreds of available official tutorials):

<https://unity3d.com/learn/tutorials/s/virtual-reality>

Event manager\messaging system tutorial -

<https://unity3d.com/learn/tutorials/topics/scripting/events-creating-simple-messaging-system?playlist=17117>

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1. AdventureCreator

<https://www.adventurecreator.org/>

2. Cradle – Twine and Twine-like stories in Unity

<https://forum.unity.com/threads/released-cradle-play-twine-stories-in-unity.333720/>

3. Danesh

<http://www.gamesbyangelina.org/2016/02/introducing-danesh-part-1/>

By Michael Cook, who also created the Angelina AI game designer. Launched 2016.

New project hailed by Emily Short for its possible IF implementation. Has some very promising and interesting WYSIWYG and model-based design concepts for integrating customizable procedural generation within Unity games.

“Danesh is a plugin built into Unity (I’m still learning how to make them look nice, so the screenshot is a bit grey). It lets you load in a generator (either a sample one that comes with Danesh, one you wrote your own, or one you found online) simply by adding a couple of lines of code to the file. After you’ve loaded a generator in you can generate content and view it in Danesh, and fiddle with sliders for the parameters the generator has. You can keep generating and tweaking, and save configurations of the generator that you think are particularly interesting or cool.

This is the kind of thing that we already do with procedural generators when we make games – we see what output they produce and we think about whether we like it or not. Maybe we generate ten or a hundred outputs to see if it’s consistent or if there’s a wide variation. Then we tweak the numbers a bit until it looks okay. What else can we do?

Connecting Output To Input

One of the things that’s really hard to do when you’re making a generator is understanding how your code affects what comes out the other end. Is this spaceship I’m looking at an extreme case? If I change this number will it make all the spaceships better, or will a rare 5% of them be even worse? The parameters a generator has are like the input to the generator, but it’s really hard to imagine how they affect the output sometimes (even worse if the parameters affect each other in some way).

So, another thing Danesh can do is tell you things about the output of the generator. Danesh comes with some metrics for maps, and you can write your own, too. A metric is a bit of code that takes some generated content and calculates a number about it. Maybe it's the ratio of petals to stamen on a generated flower. Maybe it's the percentage of the colour wheel used in a picture. Maybe it's the average value of a treasure chest in a dungeon. When you hit the 'Generate' button, Danesh runs all of these metrics on the output and gives you a report. This helps you see that, for instance, when I iterate the map generator more, the levels become more open because the rooms become bigger. We're hoping to provide lots of metrics and help people write their own too – more on that in another post.

There'll be more about expressive range in an upcoming blog post!

Understanding The Expressive Space

Of all the possible worlds you can imagine made of 3D blocks, Minecraft's world generator only ever produces a certain kind of world. You can imagine worlds entirely made of oceans, or worlds with floating spherical planets in the sky, or worlds where mountains grow downwards out of the clouds. Minecraft doesn't make these worlds because it's designed to make a particular kind of place. You might hear researchers talk about the 'possibility space' or the 'generative space' or the 'expressive space' of a generator – that 'space' is like a big bag of every possible thing imaginable (in Minecraft's case, every possible world made of 3D cubes).

Most generators just take a tiny handful from the big bag of possibilities, but how do you know which handful your generator is taking? Danesh can help show you by looking at hundreds or thousands of outputs from your generator, and measuring the metrics for each one. It averages out the results and plots them on a histogram. This is called an Expressive Range Analysis and it was first proposed by Gillian Smith and Jim Whitehead in a great paper you can read [here](#). Expressive range analysis is complicated and needs its own blog post, but it's really powerful. It might reveal that your dungeon generator never, ever produces a map with a secret treasure room next to a trap. It might tell you that although most of your world maps are well-connected, 10% of them leave the player stranded on an island. It can reveal lots of cool information about what changes you could make to the generator and what effect it might have.

Getting Help To Change Things

The last thing I want to mention before I end this introductory post is that Danesh isn't just about being a passive tool that helps you do things – it's not Photoshop for Procedural Generation. Danesh can actually go out and change your generator to improve it or tweak it in a way that you like. Suppose you sit around for half an hour changing parameters trying to stop your world generator from producing craggy messy island chains, desperately trying to get nice smooth continents forming. It's infuriating you because every parameter change has wildly unpredictable results.

So instead, you write a metric that describes the average size of a landmass. Then you tell Danesh that you want to maximise this metric – you want landmasses that are as big as possible on average, but you don't care what parameters it changes to get it. Danesh can then go away and run thousands of

generative tests, changing parameters and examining the output, trying to find the result you want. It may or may not succeed; it might even come out with something you didn't expect. It's really cool and powerful and I've barely started working on it to get it being as useful as possible."

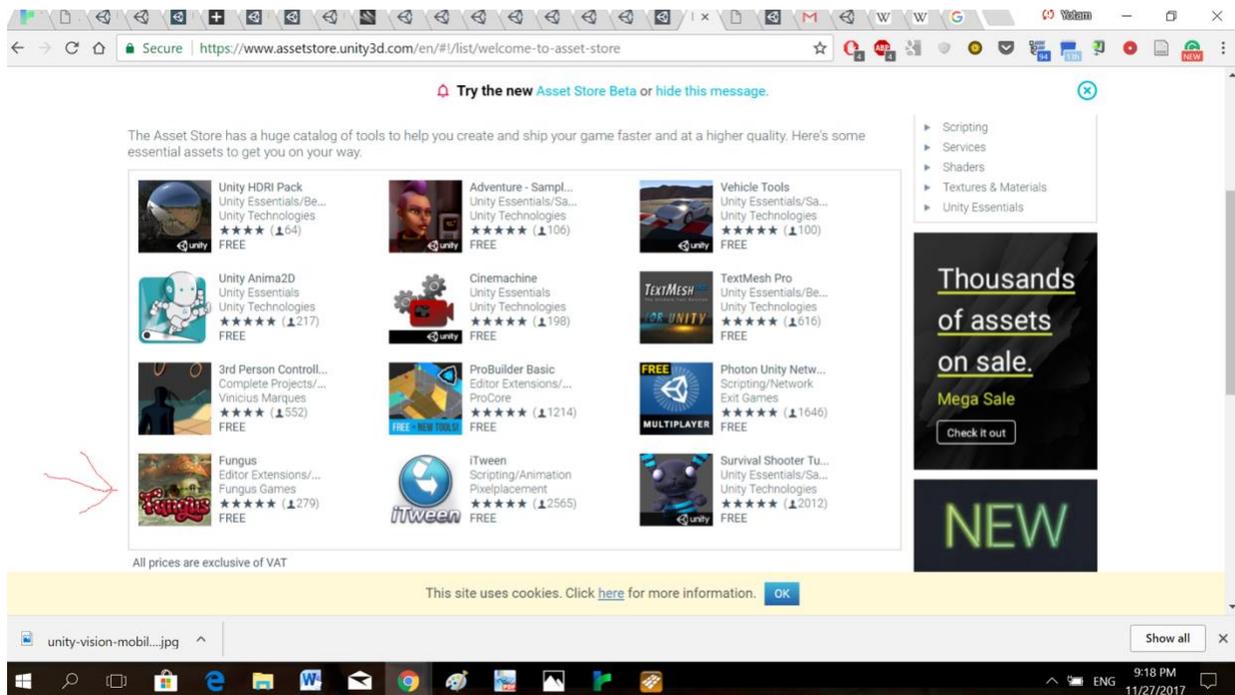
4. Fungus

<https://www.assetstore.unity3d.com/en/#!/content/34184>

Editor Extensions/Game Toolkits/Visual Novels

Add colourful characters and **craft gripping storylines for your game - for free and with no programming!**

<http://fungusgames.com/>



Among 12 'must have' assets suggested for free upon first to Unity's asset-store

Fungus is 100% free, so it's an ideal tool for teaching game development and use in game jams. Join the growing community of storytellers around the world using Fungus!

New! Includes FungusLua, a simple way to add powerful Lua scripting to any Unity project.

Watch trailer

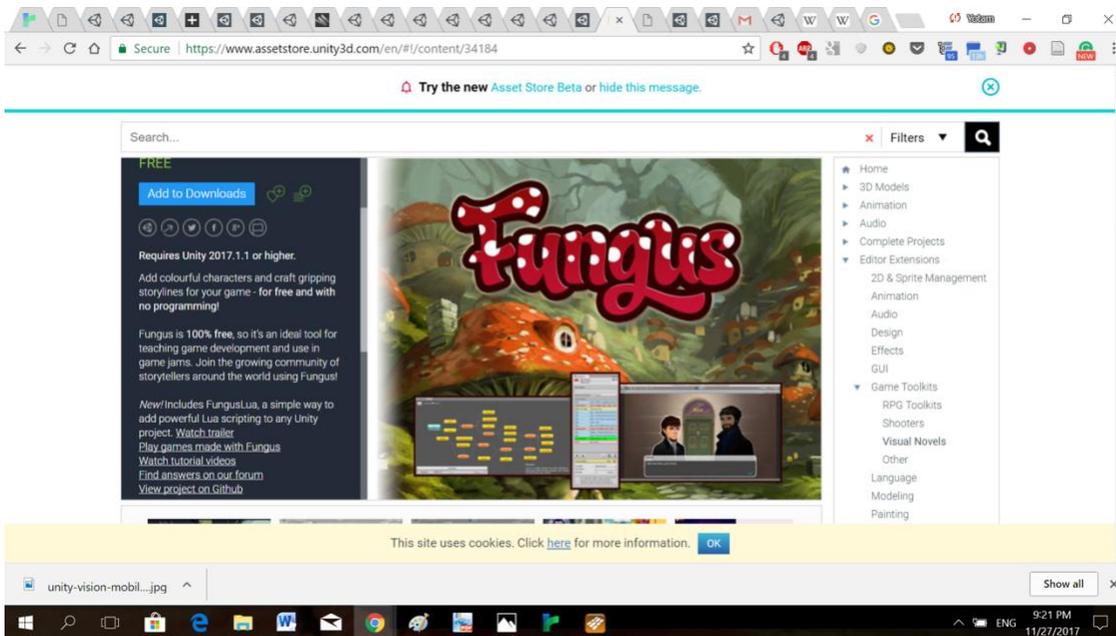
Play games made with Fungus

Watch tutorial videos
Find answers on our forum
View project on Github

Great for making Visual Novel, Interactive Fiction, RPG, Point & Click & eLearning games.

Features:

- 100% Free
- No programming required!
- **Powerful branching conversation system**
- **Works with Unity's new GUI system**
- Trigger effects mid-sentence with tags
- Intuitive Flowchart-based visual editor
- **Variables, save / load, if & while conditions**
- Translation support
- **Lua scripting system built in (FungusLua) - Export story to a text file for easy editing**
- Clickable objects and drag-and-drop
- Camera and sprite control
- Music & sound effects control [...]



More Unity IDN-relevant plugins\add-ons (seems like an almost infinitely expandable list):

<https://forum.unity.com/threads/anyone-make-text-based-games-or-try-to.369868/>

Forum discussion on making IF games with Unity

Official tutorial video: <https://www.youtube.com/watch?v=9zqUx0xZBv4>

5. Tidy Text Adventures

<https://assetstore.unity.com/packages/templates/tidy-text-adventures-5981>

“The zero-code-required, text-based-adventure creation tool of your dreams!”

6. Vive VR Toolkit

VR development plugin by Vive. “A productive VR Toolkit for rapidly building VR solutions in Unity3d.”

<https://vrtoolkit.readme.io/>

7. Yarn\Yarn Spinner

<https://github.com/InfiniteAmmoInc/Yarn>

Yarn - Unity IF\dialogue plugin

<https://github.com/theseecretlab/YarnSpinner>

Youtube video: <https://www.youtube.com/watch?v=xWoZOGHh4Qc>

Yarn Spinner, by SecretLab, launched 2016.

A very similar, more general-purpose alternative to Yarn, still focused on multiple-choice dialogue for games. Explicitly built in resemblance to Twine.

Yarn is a language that's designed to make it super easy to create interactive dialogue for games. Yarn's very similar in style to Twine, so if you already know that, you'll be right at home! If you don't, that's cool - Yarn's syntax is extremely minimal, and there's not much there to learn. The Yarn language is used in a number of cool games, including Night In The Woods and Knights and Bikes.

New! Join our narrative game development Slack! New! Continual integration API documentation now available

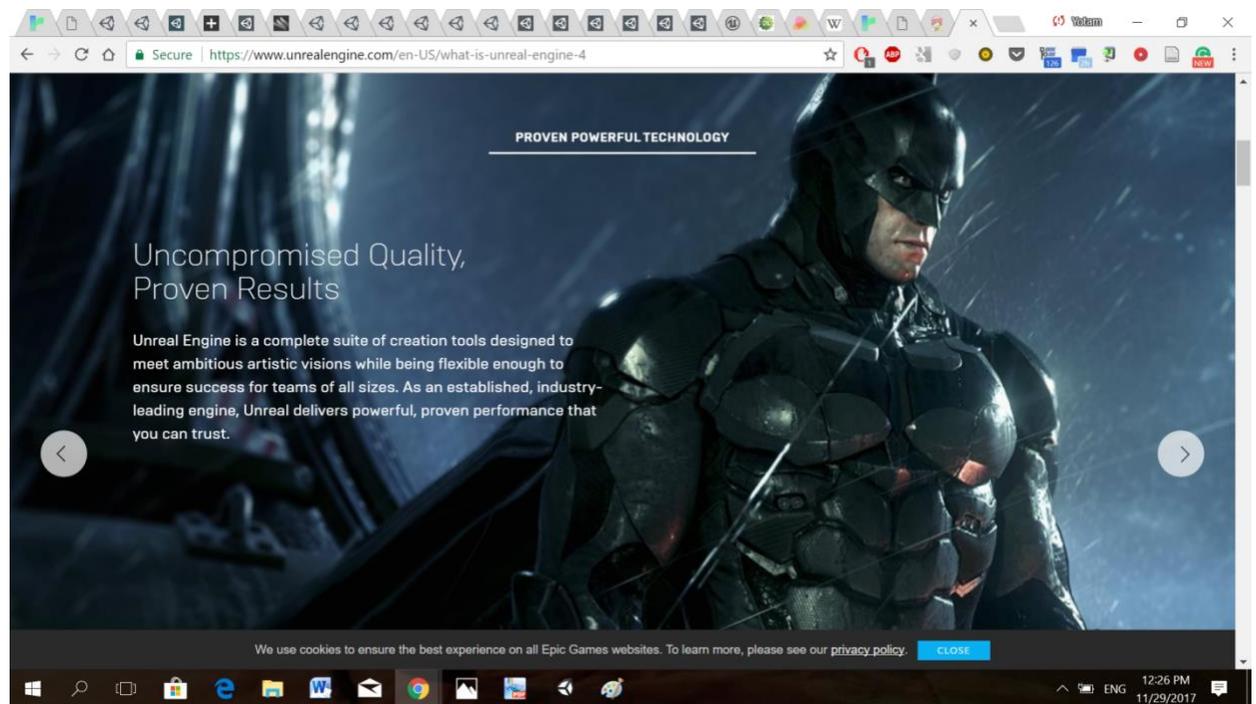
Yarn Spinner interprets the Yarn language, and is written in C#. Yarn Spinner is designed to be easy to add to Unity games, but it's also intended for use in other contexts as well.

Important: Yarn Spinner is still under development, and we haven't made our 1.0 release yet. It's probably fine to use right now, but there are a few bits and pieces that might change between now and first release.

14. Unreal Game Engine

<https://www.unrealengine.com/en-US/what-is-unreal-engine-4>

Very much alive. 2nd most popular game-engine, and the only one other than Unity that's both widely used and supports 3D and VR. More abstract and programmer-oriented and probably less friendly UI (probably also for narrative purposes) than Unity, according to a friend.



Leading the Way in Virtual Reality

There are no shortcuts to creating immersive experiences that are believable to the human mind. VR requires complex scenes rendered at very high framerates. Because Unreal Engine is designed for demanding applications such as AAA games, filmmaking and photoreal visualization, it meets these requirements and provides a solid foundation to build content on all VR platforms - from PC to console to mobile.

Forward Renderer: Push The Limits

In creating Robo Recall, Epic developed a rendering solution specific to VR. The Forward Renderer supports high-quality lighting features, Multisample Anti-Aliasing (MSAA) and instanced stereo rendering to produce crisp, detailed images at 90 FPS.

Build VR In VR

Reach out, grab and manipulate objects with the power of Unreal Engine at your fingertips. The full Unreal editor runs in VR with advanced motion controls so that you can build in a “what-you-see-is-what-you-get” environment. It’s the most robust, feature complete and capable VR development solution in the world.

Advanced Optimization

Unreal is a pure C++ engine designed for high performance. Its advanced CPU/GPU profiling tools and flexible renderer equips developers to efficiently achieve quality VR experiences.”

WebsiteToolTester article:

“The best AAA Graphics

Another hugely powerful engine, Unreal was used to create AAA games such as Deus Ex, BioShock, Borderlands or even the Final Fantasy VII remake. As you can see, it is a trusted platform with a focus on spectacular graphics and lighting effects that is trusted by big companies and indie developers alike.

Of course, you will need a big team of developers to complete big projects like the ones mentioned above, but one advantage is that **Unreal comes with a beginner-friendly solution called Blueprint that lets you get started without any coding knowledge. [Check out blueprint and expand on it here](#)**

| Good for | Notable examples |
|------------------------|---------------------------------|
| 3D Adventure Games | Abzu |
| 3D Action Adventure | Batman: Return to Arkham Asylum |
| 3D RPG | Kingdom Hearts III |
| 2D / 3D Fighting Games | Street Fighter V |
| 3D Puzzle / Platform | Snake Pass |

Pros:

- Built-in beginner solution with Blueprint
- Multi-platform export including consoles
- Outstanding next-gen graphics
- Good online resources
- Free to use until your games make a profit

Cons:

- Heavy and demanding on performance
- Even harder to pick up than Unity
- Marketplace not as full as Unity's
- Royalty based payment system"

Wikipedia entry

https://en.wikipedia.org/wiki/Unreal_Engine

"The Unreal Engine is a game engine developed by Epic Games, first showcased in the 1998 first-person shooter game Unreal. Although primarily developed for first-person shooters, it has been successfully used in a variety of other genres, including stealth, MMORPGs, and other RPGs. With its code written in C++, the Unreal Engine features a high degree of portability and is a tool used by many game developers today.

The current release is Unreal Engine 4, designed for Microsoft Windows, macOS, Linux, SteamOS, HTML5, iOS, Android, Nintendo Switch, PlayStation 4, Xbox One and virtual reality (SteamVR/HTC Vive, Oculus Rift, PlayStation VR, Google Daydream, OSVR and Samsung Gear VR).

[...]The second version made its debut in 2002 with America's Army, a free multiplayer shooter created by the U.S. Army.[23] While previous technology was used, this generation saw the renderer completely re-written,[24] and **integrated a number of features, such as the Matinee cinematic editing tool, export plug-ins for 3D Studio Max and Maya, and the Karma physics engine,**[25] a tool by Math Engine that powered the ragdoll physics in Unreal Tournament 2003.[26][27]

[...]Unlike Unreal Engine 2, which still supported fixed-function pipeline, **Unreal Engine 3 (2004) was designed to take advantage of fully programmable shader hardware** (in DirectX 9 terms, it required shader model 3.0).[32] All lighting calculations were done per-pixel, instead of per-vertex. On the rendering side, Unreal Engine 3 provided support for a gamma-correct high-dynamic range renderer.

[...]Throughout the lifetime of UE3, significant updates have been incorporated,[40] including a **global illumination solver, improved destructible environments, soft body dynamics, large crowd simulation, iPod Touch functionality,[41] Steamworks integration,[42] a real-time global illumination solution,[43][44] and stereoscopic 3D on Xbox 360 via TriOviz for Games Technology**

[...]While Unreal Engine 3 has been quite open for modders to work with, the ability to publish and sell games made using UE3 was restricted to licensees of the engine. However, in **November 2009, Epic released a free version of UE3's SDK, called the Unreal Development Kit (UDK), that is available to the general public.[51][52]**

[...]On March 19, 2014, at the Game Developers Conference, Epic Games released Unreal Engine 4, and all of its tools, features and complete C++ source code, to the development community through a new subscription model.

[...]UE4 also includes new developer features to reduce iteration time, and allows updating of C++ code while the engine is running. The new "Blueprint" visual scripting system (a successor to UE3's "Kismet"[63]) allows for rapid development of game logic without using C++, and includes live debugging.[64][65] The result is reduced iteration time, and less of a divide between technical artists, designers, and programmers.

[...]

On September 4, 2014, Epic released Unreal Engine 4 to schools and universities for free, including personal copies for students enrolled in accredited video game development, computer science, art, architecture, simulation, and visualization programs.[75][76]

On February 19, 2015, Epic launched Unreal Dev Grants, a \$5 million development fund designed to provide financial grants to innovative projects being built with UE4.

[...]As of March 2, 2015, Unreal Engine 4 is available to everyone for free, along with all future updates,[80][81] with a selective royalty schedule.[82][83] Oculus VR announced in October 2016 that it will cover royalty fees for all Unreal Engine titles shipping on the Oculus Store for up to the first \$5 million of gross revenue per game.[84]

[...]UnrealScript (often abbreviated to UScript) is Unreal Engine's native scripting language used for authoring game code and gameplay events before the release of Unreal Engine 4.

The language was designed for simple, high-level game programming.[96] The UnrealScript interpreter was programmed by Tim Sweeney, who also created an earlier game scripting language, ZTZ-ooop.[97]

Similar to Java, UnrealScript is object-oriented without multiple inheritance (classes all inherit from a common Object class), and classes are defined in individual files named for the class they define. Unlike Java, UnrealScript does not have object wrappers for primitive types

In March 2014, Epic announced that the Unreal Engine 4 would no longer be supporting UnrealScript, but instead support game scripting in C++. Visual scripting would be supported by the Blueprints Visual Scripting system, a replacement for the earlier Kismet visual scripting system.

[...]Licenses

In addition to the game industry, the Unreal Engine has also seen adoption by many non-gaming projects. For instance, visual effects company Industrial Light & Magic employed the Unreal Tournament version of the engine to recreate Rouge City, a fictional place in the 2001 film A.I. Artificial Intelligence, in order to help Steven Spielberg plan out camera angles for scenes set in Rouge City.[98] The popular children's TV show LazyTown used Unreal Engine 3 during filming to generate virtual sets for real-time integration with footage of actors and puppets performing in front of green screens.[99] On the architectural side, HKS announced in 2007 that it had licensed UE3 to produce detailed interactive environments of its projects.[100] Among them was the Cowboys Stadium, whose owners were able to explore its design before construction was completed in 2009.[101] The Unreal Development Kit also was used by the Michigan Department of Transportation, who in 2010 designed a multiscreen driving simulator in a close partnership with Parsons Brinckerhoff to show how vehicles can be plugged in to the national transportation grid.[102] That year also saw the premiere of Chadam,[103] an Unreal Engine 3-powered animated internet series produced by HDFilms and distributed by Warner Bros. Television Group.[104]

In March 2012, Epic Games partnered with Virtual Heroes of Applied Research Associates to launch Unreal Government Network, a program that handles Unreal Engine 3 licenses for government agencies. With this support agreement, Virtual Heroes was able to license the technology to the departments, agencies and units of the United States and its allies across multiple platforms.[105] Epic also revealed that several UGN projects were already underway, including an Intelligence Advanced Research Projects Activity (IARPA) contract for Virtual Heroes to design serious games with the aim to help intelligence analysts tackle instinctual biases that might colour their findings, an anaesthesiology training application for U.S Army physicians, and a multiplayer crime scene training simulation developed by the FBI Academy.[106][107] Additionally, Epic's tech was also being used by a top five defense contractor and a national laboratory for custom-made model integrations and visualization.[108] Later in December, defense IT and software firm IPKeys Technologies licensed the third version of the engine for development of I-GAME, a tool intended to train tactics and techniques in regards to Counter-IEDs.[109]

In April 2013, the U.S. Air Force licensed the ARA Unreal Engine 3 Web Player, an UE3-based plug-in developed by Virtual Heroes, for use on USAF computers.[110] The same year, IT systems integrator Intelligent Decisions announced that it had become part of the Unreal Government Network. As a new member of the program, the company would improve training simulations with the technology in support of a contract with the U.S. Army Research, Development and Engineering Command (RDECOM).[111] Similarly, the U.S. Department of Homeland Security's Science and Technology Directorate (DHS S&T) and **the U.S. Army's Training and Doctrine Command and Research Laboratory used the engine to develop a training platform for first responders titled Enhanced Dynamic Geo-Social Environment (EDGE)**. [112] Built with a budget of \$15 million, the virtual environment was first demonstrated at a police station on November 20, 2013, **allowing officers, firefighters, emergency medical professionals, dispatchers and unified command center operators to respond to a virtual active-shooter** event inside a model of the Sheraton Grand hotel in downtown Sacramento.[113] On June 26, 2017, the EDGE platform was launched for free for all first responders, and a second training scenario, featuring a school shooting scene, will be released in the fall of 2017.[114]

In 2017, Epic Games held its annual keynote at the Game Developers Conference to showcase features and non-gaming uses for the Unreal Engine. [115] Speaking at the keynote, Industrial Light & Magic's CCO John Knoll and Lucasfilm ADG's Principal Engineer and Architect Naty Hoffman detailed **how UE4 was extended to render the droid K-2SO in the 2016 film Rogue One**, achieving final pixels on screen while bypassing the traditional pre-rendering process.[116]

Youtube tutorial for bluepring: <https://www.youtube.com/watch?v=cCl1DHHIYeY>

Plugins

“The authoring part of the IS engine”

Cavezza et al. created a mod of the old Unreal engine geared to facilitate interactive storytelling in 2004, which seems essentially equivalent to designing what today would be an engine plugin. The tool is long-dead, but shows that the connection between game engines and graphic IDN authoring tools has long ago been potent.

Cavazza, Marc, Fred Charles, and Steven J. Mead. "Developing re-usable interactive storytelling technologies." Building the Information Society. Springer US, 2004. 39-44.

“Our technology (Figure 1) is developed on top of a computer game engine (UT 2003™, Epic Games), which is an approach inspired from foundational work in IS [Young, 1999] [Young, 2000]. The game engine ensures real-time visualisation (including camera control) as well as basic interaction mechanisms (between agents, between agents and objects, etc.).

We have developed several additional layers (amounting to a total of 10 000 lines of C++ code and 8000 lines of UnrealScript code) corresponding to the narrative engine, which is **essentially a HTN planner determining for each virtual actor what action it should take next. The actions selected are passed to the engine, in which they are associated to corresponding scripts describing the physical realisation of the action** (including specific animations). The planner communicates with the visualisation engine using UDP socket connections. The two mechanisms for story generation are interaction between agents and user intervention. The latter is essentially **mediated by speech input, which is why the system accepts data from an off-the-shelf speech recognition system. The recognised utterance is further processed into templates that can be interpreted in terms of narrative content.**

[...]

The generation of actions for each character is based on a role formalized as an HTN, which decomposes the role into independent tasks, ordered chronologically, until these tasks can be solved through elementary actions. The system relies on the native mechanisms of UT 2003™ for many of these [...]As for the visual presentation, many actions require specific animations to be imported into the system (actions such as sitting, or kissing, are obviously not part of the native library of a first-person shooting game).

[...]

We have only recently started to distribute alpha versions of the system, which have been **used for teaching AI-based animation and multi-agent systems** at our institution, as well as others.”

15. Source (and GoldSource)

By Valve

The open engine published alongside CounterStrike in 2004, very influential and used for a huge number of mods, including narrative games that subvert the FPS genre like Dear Esther (some other heavily modded games that relate to IDN include Neverwinter Nights and Warcraft 3). Probably the most used engine of all time.

Xash is a popular game engine that basically re-constructs the Source Gold engine (though mostly used to run old Source game)

<http://www.moddb.com/engines/xash3d-engine>

<http://www.moddb.com/engines/goldsource>

Gold Source (also known as Gold Src) is a heavily-modified version of the original Quake 1 engine, that powered some of the most critically acclaimed games of it's day:

Half-Life

Half-Life: Opposing Force

Half-Life: Blue Shift

Team Fortress Classic

Counter-Strike

Day of Defeat

and many more.

A powerful and versatile engine for its time, it helped propel modding forward quite a bit with its mod development tools. And even though it's already 10+ years old, its mod projects are still going strong.

16. Shiva

<https://www.shiva-engine.com/>

Cross Platform Development made easy

ShiVa3D 1.9.2 is a 3D game and application development suite that comes in a n easy to use, yet very powerful WYSIWYG (what you see is what you get) editor. Consider ShiVa the glue between your creative ideas, your art, your code, and the hardware you are targeting. We have put together the following short video for you, so you can get an idea of how comfortable it is to work with our tool:

https://www.youtube.com/watch?time_continue=2&v=LKuqD055QFA

Genre-specific game-makers

17. Adventuregamestudios

<http://www.adventuregamestudio.co.uk/>

“The AGS Editor is a Windows-based IDE for creating your games as quickly and easily as possible. Everything you need from importing graphics and writing game scripts right through to testing your game, under one roof!”

“Make Games

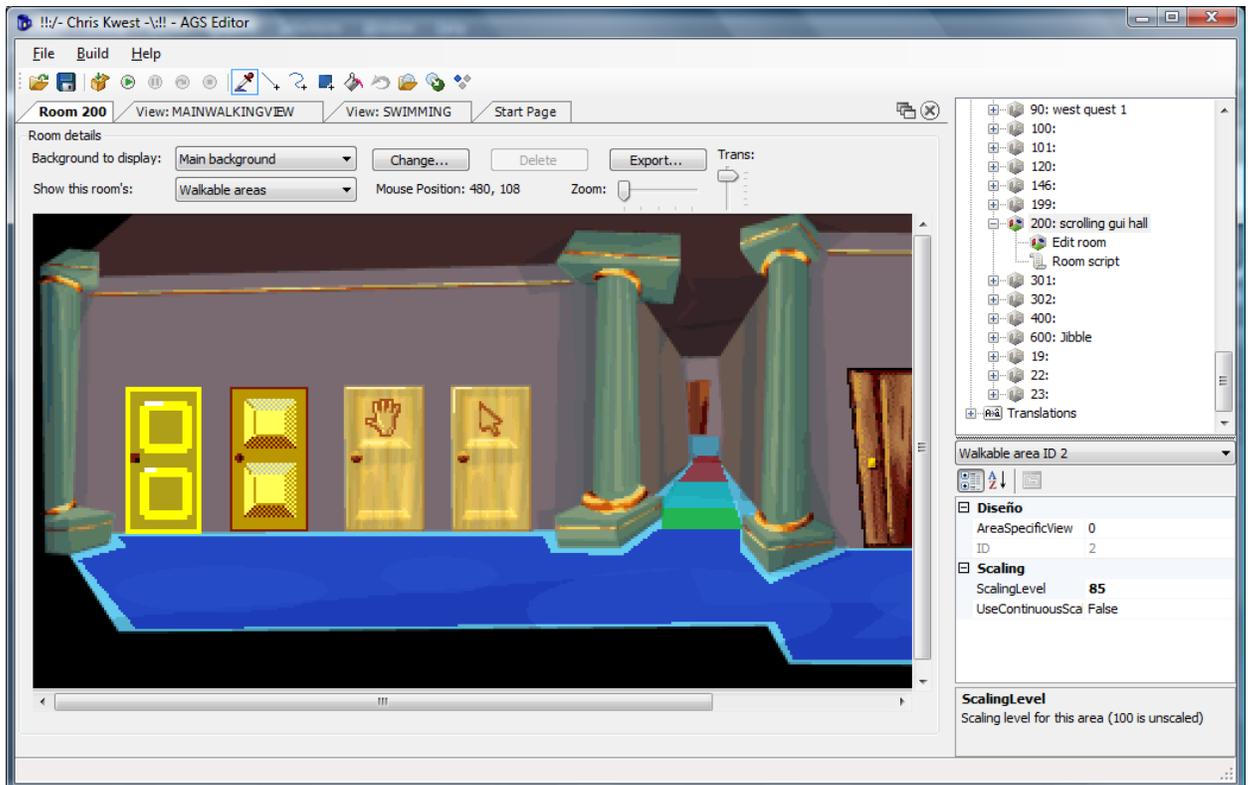
Think you've got what it takes?

Adventure Game Studio provides the tools to make your own adventure, for free! Bring your story and artwork and slot it in, and let AGS do the rest.

AGS provides everything you need from within one easy-to-use application. Create, test and debug your game, all in one place. Why wait? Get cracking on your first game now!

Hundreds of games have been made with AGS.

From quick time-fillers to full-length epic adventures, we've got plenty of choice of free games for you to play!"



Tutorials: <http://www.adventuregamestudio.co.uk/site/ags/tutorial/ags/>

Forums: <http://www.adventuregamestudio.co.uk/forums/>

Facebook page: <https://www.facebook.com/adventuregamestudio>

18. Adventure (and other Clojure projects)

Clojure is a new-school general programming language, a subset of Lisp, considered highly fitting for game development (<https://clojure.org/>)

Wiki - <http://www.clojure-games.org/>

Adventjre – github project facilitating adventure game-making in Clojure:

<https://github.com/facundoolano/adventjre>

Youtube video on making adventure games with Clojure:

<https://www.youtube.com/watch?v=lql2yFXzKUs>

19. Bitsy

<https://ledoux.itch.io/bitsy>

“about bitsy v4.5

hi! bitsy is a little editor for little games or worlds. the goal is to make it easy to make games where you can walk around and talk to people and be somewhere. not sure where to start? try this helpful bitsy tutorial! if you need inspiration, you can play other bitsy games on itch.io, which is a great place to share games!”

“instructions

you can draw things in the paint panel, then place them in your world in the room panel. you can write dialog for your characters (aka sprites) too. you can also animate your drawings if you want to!

some words:

- * room - a place in your game world
- * avatar - the player's character
- * tile - a piece of the scenery
- * sprite - interactive characters or things

to try your game, switch the room to play mode:

- * walk around with the arrow keys
- * talk to sprites by walking up to them

you can make multiple rooms, but make sure you add some exits to connect them to each other!

use "share game" to download the game as an html file. you can email the file to a friend, or host it online! if you want to talk about bitsy, report a bug, or share a game you made, i'm on twitter @adamledoux or you can post in the community forum"

Community forum:

<https://ledoux.itch.io/bitsy/community>

Pastemagazine article

<https://www.pastemagazine.com/articles/2018/01/bitsy-makes-it-easy-to-design-small-narrative-game.html>

Created by Adam Le Doux, Bitsy is a browser tool used for making small, narrative games. It's incredibly easy to use; in fact, the tool provides you with a lot of basic items, such as wall tiles and character sprites, just to get started on a small game. Since it came out about a year, Bitsy has become a useful tool for creating emotional and exciting games.

<https://itch.io/games/tag-bitsy>

Bitsy games on Itch

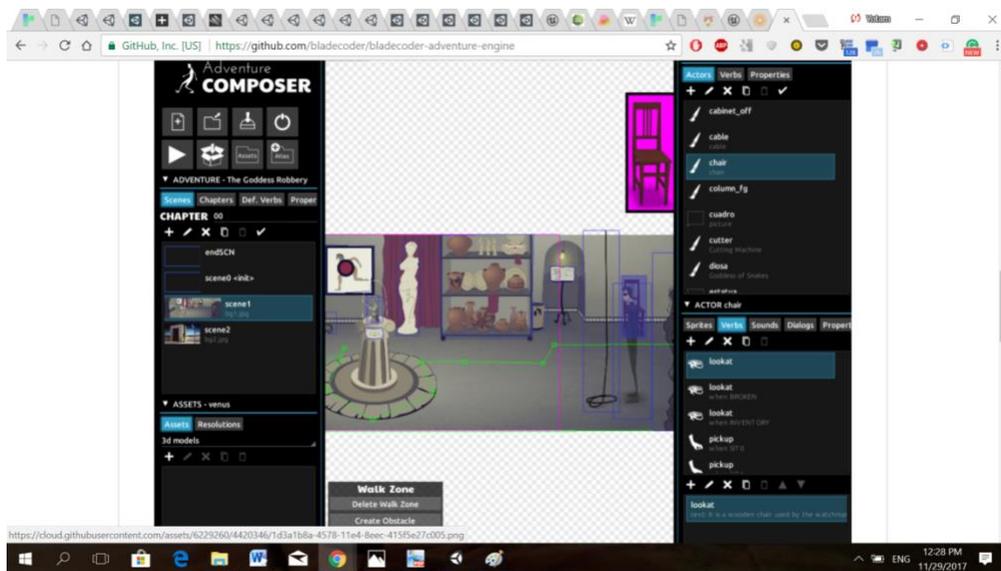
20. Bladecoder-Adventure-Engine

<https://github.com/bladecoder/bladecoder-adventure-engine>

"Classic point and click adventure game engine and editor"

Apparently simplified game engines geared and templated specifically for adventure games feature in many IDN lists. Makes sense, since it is probably the most narrative-oriented genre (perhaps alongside single-player RPGs) and some features central to adventure games inherently relate to narrative progress.

Very niche (github is already a programmer-forum. At least somewhat alive – last software



update on 4.12 – but kind of losing momentum (no programmer discussion fro 2017 in the webportal). Pretty detailed tutorial. Potentially interesting tool, though for a very specific genre.

The Aventure Editor is a full featured editor to create adventure games. You can create games that runs in Desktop (Windows, Linux, MacOS), Android and IOS with minimal effort.

The Adventure Composer will create a game based in the LibGdx framework.

Tutorial components:

- The Adventure
- Project structure
- Working with assets
- Multiple resolutions
- Chapters
- Scenes
- Actor layers
- Walk Zones and obstacles
- Scene music
- Actors
- Background Actors

Sprite Actors
Character Actors
Obstacle Actors
Anchor Actors
Animations
Image renderer
Atlas renderer
Spine renderer
3D renderer
Stand, Walking and Speak animations
Dialogs
Verbs and Actions
Control actions
Sounds

21. CANVAS + Story World Builder

By Disney Research + Rutgers University, New Jersey + ETH Zurich

https://www.eurekalert.org/pub_releases/2016-11/dr-mta111716.php

Kapadia, Mubbasir, et al. "CANVAS: computer-assisted narrative animation synthesis." Symposium on Computer Animation. 2016.

Abstract: "Despite the maturity in solutions for animating expressive virtual characters, innovations realizing the creative intent of story writers have yet to make the same strides. The key challenge is to provide an accessible, yet expressive interface for story authoring that enables the rapid prototyping, iteration, and deployment of narrative concepts. We present CANVAS, a computer-assisted visual authoring tool for synthesizing multi-character animations from sparsely-specified narrative events. In a process akin to storyboarding, authors lay out the key plot points in a story, and our system automatically fills in the missing details to synthesize a 3D animation that meets author constraints. CANVAS can be used by artists and directors to pre-visualize storyboards in an iterative fashion, and casual users may provide arbitrarily sparse specifications and harness automation to rapidly generate diverse narratives. CANVAS provides an accessible interface for rapidly authoring and pre-visualizing complex narratives. Automation reduces the authoring effort further without undermining creative control or interfering with the storytelling process."

SWB – Story World Builder

Poulakos, Steven, et al. "Evaluating accessible graphical interfaces for building story worlds." International Conference on Interactive Digital Storytelling. Springer, Cham, 2016.
Integrates into CANVAS

Abstract: “In order to use computational intelligence to assist in narrative generation, domain knowledge of the story world must be defined, a task which is currently confined to experts. In an effort to democratize story world creation, we present an accessible graphical platform for content creators and end users to create a story world, populate it with smart characters and objects, and define narrative events that can be used to author digital stories. The system supports reuse to reduce the cost of content production and enables specification of semantics to enable computer assisted authoring. Additionally, we introduce an iterative, bi-directional workflow, which bridges the gap between story world building and story authoring. Users seamlessly transition between authoring stories and refining the story world definition to accommodate their current narrative. A user study demonstrates the efficacy of our system to support narrative generation.”

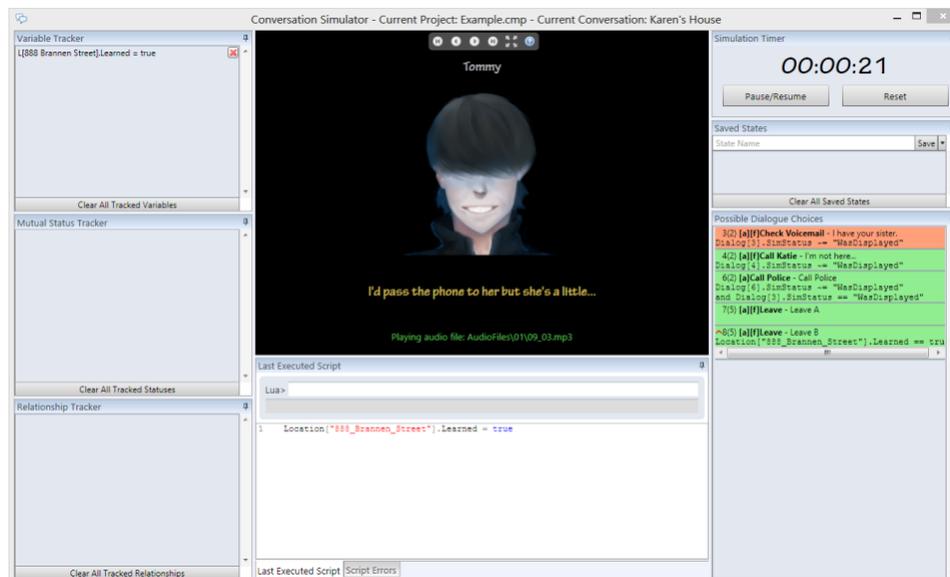
22. Chatmapper

<http://www.chatmapper.com/>

“CHATMAPPER IS A FULL FEATURED VISUAL EDITOR FOR MANAGING STORYLINES FOR GAMES”

According to the list: “A proprietary standalone dialogue mapping editor.”

Presents itself as proprietary tool, but seems very well thought out, has a great-looking UI and can clearly theoretically be employed to create a dialogue-based IDN from start to finish. So it's a limit case, but I think worthy of inclusion.



“Create your own story

Chat Mapper is an easy to use tool for writing and testing nonlinear dialogue and events for fields where complex problems are the normal, such as entertainment, e-learning, emergency response, diagnoses health care, sales and customer service, and strategic planning.

Our goal is to help entertainment companies, government agencies, and educators world-wide not only see the bigger picture, but be able to create it, traverse it, and change it as they go.”

Modern User Friendly Design

Using the latest development tools available, Chat Mapper is designed to be as user-friendly and stylish as possible. Typically there are several different ways to accomplish tasks through on-screen buttons, menu options, shortcut keys, or right-click context menus. The layout is fully configurable with tabs and hidden interface elements so you can concentrate on the content.

Non-Linear Branching Tree Graph Visualization

After researching many methods for displaying complex non-linear dialogue, we found that the easiest to grasp intuitively is the tree graph. With a “root” node defining the entrance point of the conversation, dialogue options stem from this to form what looks like a tree. Links can be defined between any two nodes, but only one is shown as a “primary” link for simplicity with the others as “connector” links. Chat Mapper also supports sub-trees via group nodes, links to other conversation, and links to other project files for easy organization.

Conversation Simulator

While designing a complex conversation, how do you know it will work as intended in the final product? That is where the conversation simulator excels. The simulator will present your dialogue tree as a game complete with audio, graphics, and dialogue menus. You can also use the simulator to debug your logic by tracking variables and finding Lua script errors. With a license, you can save simulator states and return back to any point in the simulation with just a button click.

Control Conversation Flow With Lua Scripts

In almost every non-linear dialogue tree, there are choices presented to the player during the course of the interaction. With Chat Mapper, it is easy to define conditions using Lua to control which tree branches are available based on previous choices. For example, you may only want a certain dialogue to be offered when the player has a specific inventory item. You may also define Lua scripts to be executed when the dialogue is displayed to set custom variable values, useful for assigning scores to correct choices.”

23. Ensemble

<https://games.soe.ucsc.edu/project/ensemble-engine>

By Ben Samuel, Aaron A. Reed, Paul Maddaloni, Michael Mateas, Noah Wardrip-Fruin. University of Santa-Cruz.

“The Ensemble Engine is a framework and tool for incorporating social physics into playable experiences. The design of the system is directly informed by the experience of more than five years of building the CiF system, and using CiF to create multiple games such as Prom Week. Put simply, a social physics system looks at all of the social factors impacting a character, or group of characters, and determines how the characters might best react to the current social state to suit their desires, as well as directly changing the social state itself.

To use the Ensemble Engine in a project of your own, download the "EnsembleEngine--GettingStartedBuild.zip" file. Once unzipped, you'll find a javascript file you'll be able to include in your game, along with documentation of the engine's API, a sample working game to give you a feel of Ensemble in action, and tutorials that show how social physics can be integrated into a game. The authoring tool files contain an application that allows for the easy authoring of influence rules: the social considerations that determine what characters will want to do with each other.

Both the authoring tool and Ensemble itself are actively being developed. If you have any questions, or run into any difficulties, please do not hesitate to contact the creators.

While the primary motivation for creating the Ensemble Engine is to aid the spread of social physics, a secondary motivation is to make a family of artificial intelligence techniques more broadly available to both independent game creators and game researchers. The Ensemble Engine approach to enabling socially based gameplay has the potential to make a variety of innovative game projects easier to create, and the creators look forward to helping explore them as widely as possible.”

Samuel, Ben, et al. "The ensemble engine: Next-generation social physics." Proceedings of the Tenth International Conference on the Foundations of Digital Games (FDG 2015). 2015.

Abstract: “Despite being central to many game stories, dynamic social relationships in video games are difficult to make playable in meaningful ways. To help address this issue, this paper presents the Ensemble Engine (EE), the first publicly available “social physics” engine. The Ensemble Engine is inspired by the lessons learned from more than five years building the Comme il Faut (CiF) social physics engine, and a number of games employing it (including Prom Week). The Ensemble Engine retains the most successful aspects of CiF, while also making major improvements in areas such as the flexibility of its action structure and expressivity of its rules. The system is authored in an openstandard language (JavaScript) and includes an authoring tool to increase accessibility for game researchers and creators. Through these improvements and this dissemination strategy, the Ensemble Engine represents an opportunity for the potential of social physics to become much more broadly explored.”

Github page: <https://github.com/ensemble-engine/ensemble>

On Samuel’s website: <http://www.ben-samuel.com/projects/the-ensemble-engine/>

24. Game Salad

Amateur friendly, heavily templated 2D engine primarily for newcomers without coding knowledge

“GameSalad is the revolutionary game development platform that allows anyone to create the game of their dreams without writing a line of code. It’s also the best way to introduce programming concepts, game design, and digital media creation to your students.”

<https://www.websitetooltester.com/en/blog/best-game-engine/#construct>

Gamesalad – the educator’s choice

“A recent Forbes article called GameSalad “the Youtube for Games”, and while the name is slightly misleading, it does tell you that these guys want to be for everyone. Their solution is an incredibly easy to use drag and drop program for creating 2D games that comes with its own physics and simple “rules” you apply to objects. In fact, GameSalad even market their platform at educators who want to teach student how to create games in the classroom. Of course, it is quite limited in terms of features, but it should be enough for mobile apps and addictive 2D casual games.

Launched in 2010, GameSalad has been used by over one million aspiring game developers and has powered over 75 games that reached the top 100 in the App Store, including multiple #1 games.”

Youtube: <https://www.youtube.com/watch?v=LbPEHXDjo4M>

25. ITY Studio - <https://itystudio.com>

“Create your own educational multimedia

assets in an easy and intuitive way.

ITyStudio, first authoring tool for Serious Games

and 2D and 3D simulations”

26. One-Roll Engine

“The One-Roll Engine (or O.R.E.) is a generic role-playing game system developed by Greg Stolze for the alternate history superhero roleplaying game Godlike. [1] The system was expanded upon in the modern-day sequel, Wild Talents, as well as the heroic fantasy game Reign and the free horror game Nemesis. A simpler version was used for Monsters and Other Childish Things. The One-Roll Engine is notable for its unique dice rolling system in which matched values on ten-sided dice (d10s) determine all variables of a check in a single roll. This eliminates, for example, the separate initiative, hit location and damage rolls common during combat in other systems.”

https://en.wikipedia.org/wiki/One-Roll_Engine

Tutorial: <http://arcdream.com/home/2011/04/a-one-roll-engine-tutorial/>

Youtube video: <https://www.youtube.com/watch?v=xob93HSJUBI>

27. RPG in a Box

<https://zeromatrix.itch.io/rpginabox>

“RPG in a Box is a tool for easily creating 3D grid-based, voxel-style RPGs and adventure games.”

WHAT IS "RPG IN A BOX"?

RPG in a Box is designed to be a set of tools for easily creating 3D grid-based, voxel-style role-playing and adventure games—everything you will need for building and sharing your own game, all packaged together in a box, so to speak! This "box" will contain an assortment of editors (centered around a map editor and a voxel editor) that will allow you to make your game the way you want. I will be striving to make the software user-friendly so that no knowledge of programming, computer graphics, or modelling will be required, all while still maintaining as many customizable aspects as possible so that your game can be unique.

MY VISION

This is a single-person project and I am extremely dedicated to seeing it through to becoming a fully-featured tool. While the first release of RPG in a Box was about a year ago in June of 2015, over the past 10 years or so I have worked on various iterations of the idea on and off and it is something I am very passionate about. At this point in time, I have some of the base functionality implemented, and I would like to gauge interest from the community and gather feedback and suggestions to help drive the project by way of a limited "Founder's Access" period on Itch.io, followed by Early Access on Steam. You will always be free to distribute or sell your games made with RPG in a Box - no strings attached. I would just ask that you send me a link so I can see what you have created!

THE ENGINE

RPG in a Box is currently being developed using Godot, an open source MIT licensed game engine.”

Youtube video: https://www.youtube.com/watch?time_continue=2&v=sS1O4Uhsi-Y

28. RPG Maker MV\Degica 'Maker' series

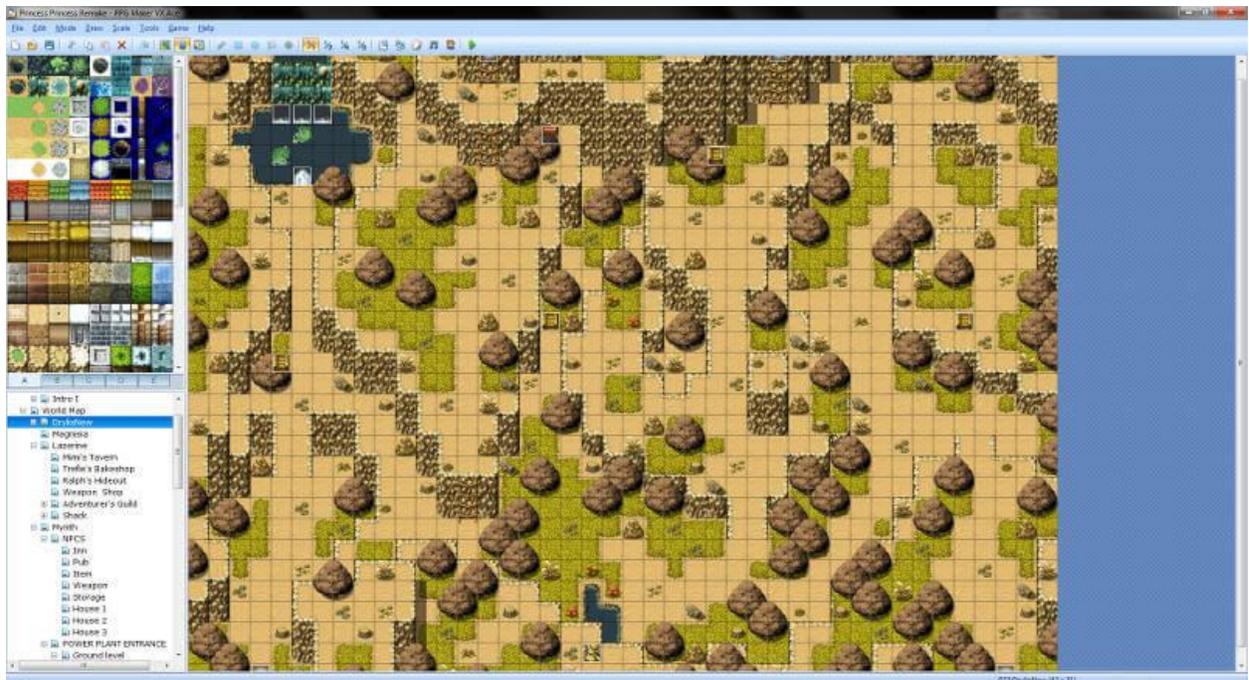
<http://www.rpgmakerweb.com/>

“MAKE YOUR OWN GAME WITH THE RPG MAKER SERIES!

Ever dream of making your own video games? With RPG Maker, those dreams can become a reality, even if you know nothing about game programming! All it takes is a combination of your imagination and dedication, and our software. Imagine your friends playing as the heroes you created, traversing dungeons you crafted, and thwarting the evil plans your villains hatched.

The RPG Maker series allows you to customize every aspect of your game with an easy-to-use interface, making it perfect for beginners yet powerful enough for experts. Unleash the power of RPG Maker to create your own RPG Masterpiece!

According to wikipedia, “Degica is a Japanese company specialising in digital services and eCommerce in Japan. The company also acts as a publisher for various video games.” They seem to be publishing a series of specialized tools for game-making in certain genres on a regular basis. RPG Maker seems like the main\most relevant one (the web portal for all the tools is called “rpg maker”, but alongside multiple versions of it, they also developed “Visual Novel Maker, Manga Maker, and IG (indie game) Maker (which for some reason is geared for “Platformers, Action RPGs, 2D Shooters or any combination of the three you can imagine!”. Since the interfaces of all these tools seem very similar and I assume they mostly just switch the templating around for the relevant genre, I find it redundant to list them as separate tools.



“RPGMAKER was born to fulfill the desire of creating an original RPG without programming knowledge. Four years have passed since the release of the previous RPGMAKER, VX Ace. The landscape of gaming, especially for RPGs, has changed greatly. So did the needs of our users.

(Interesting to check differences from previous version in this sense). With the latest installment, RPGMAKER MV allows the dreams of many of its fans to come true! RPGMAKER can now create RPGs for MacOSX, Android and iPhone!

DOWNLOAD WINDOWS TRIAL BUY NOW! ONLY \$79.99

* Your purchase will include: Stand-alone version of RPG Maker MV for Windows, complimentary Steam key for RPG Maker MV for Windows/Mac/Linux, free bonus materials.

SAMPLE DATA INCLUDED

RPG Maker MV Feature Map, effect and more, including rich sample data

To help everyone create a game easily, we included some sample datas that you can easily use! We have over 100 Sample Maps, Character Generator Parts and more! RTP is now integrated in the engine to save the users trouble.

JAVASCRIPT TO CREATE COMPLEX GAMES

RPG Maker MV uses the well known JavaScript, in combination with HTML5 export. By mastering Javascript, you will be able to change the game to your liking, from Battles to Menu UIs. This feature is oriented to experienced developers. You now have the ability to control all parts of the game. No more hidden classes!

RPG Maker MV Feature Javascript scripting

RPG Maker MV Feature Multiplatform Distribution And Mac Support

You can now create your own RPG Maker games on Macintosh. It will be released at the same time as the Windows version. RPG Maker MV users will be able to build games for the following platforms:

Windows/EXE; MacOSX/APP; Android/APK; iOS/IPA; HTML 5 for Web Browsers

MOUSE & TOUCH INPUT SUPPORT

Tired of doing all actions via the keyboard? You can now play your RPG with your finger on touch devices, and mouse on computers.

LARGE DATABASE

RPG Maker MV Feature Large Database

Support for twice as many items as VX Ace for a grand total of 2,000!

BATTLE SYSTEM MODES

With a tick of a checkbox, you can switch from the classic Front View Battle to Side View.

THREE MAP LAYERS

RPG Maker MV has an automated upper layer to make it easy to create and edit elaborate maps!

HIGHER SCREEN RESOLUTION

The previous RPG Maker's screen resolution was 544x416 pixels. RPG Maker MV's screen resolution is now 816x624 pixels. The size of all graphical assets (including animations) are now 1.5 times the previous versions of RPG Maker. For example, characters used to be 32x32, and now they are 48x48.

INTRODUCING PLUGIN MANAGER

By adding js files in the project's plugin folder, you will be able to select the plugin in the Plugin Manager. You can see script details, script parameters and the ability to set it ON and OFF. Using Plugin Manager will be much easier to use than the old format. Allowing minimal user interference to prevent errors and easily order the scripts than the previous makers.

EVENT SEARCHER

One of the missed functions from RPG Maker 2003, The Event Search function is back! The bigger your game gets, the more Variables, Switches and Events you'll use. It quickly becomes harder to manage and find specific parameters. Using the Event Search tool will allow you to save time and quickly see all instances of a particular variable or switch!"



WebsiteToolTester article:

<https://www.websitetooltester.com/en/blog/best-game-engine/#construct>

“Although it’s worth noting that people have used RPG Maker for multiple game genres, you’ve guessed that this engine only does one thing – and it does it well. It comes with a WYSIWYG editor, and you can also create the 2D art directly in it. One confusing thing is that there are 7 different versions of RPG Maker, all of which allow different features, and it’s worth noting that the learning curve is slightly steeper than with certain drag and drop solutions.

| Good for | Notable examples |
|---------------|------------------------|
| 2D RPGs (duh) | Clock of Atonement |
| 2D Arcade | Touhou Wandering Souls |

Pros:

Good for artists

Excellent tile editor

WYSIWYG editor

Helpful and passionate community

Has simplified code

Cons:

Confusing versions with different features

Not all versions can export to all platforms

Slightly difficult for complete beginners

Genre limitation”

Youtube tutorial: <https://www.youtube.com/watch?v=SneWwil5v1k>

Youtube ‘trailer’ for the tool: <https://www.youtube.com/watch?v=AdLt8ZcyCqA>

Tutorials: <http://blog.rpgmakerweb.com/category/tutorials/>

Forums (quite active): <https://forums.rpgmakerweb.com/index.php>

Links for other, similar Degica authoring tools:

Visual Novel Maker (Steam portal)

http://store.steampowered.com/app/495480/Visual_Novel_Maker/

Manga Maker

<http://www.rpgmakerweb.com/products/programs/manga-maker-comipo>

IG Maker

<http://www.rpgmakerweb.com/products/programs/ig-maker>

29. Stencyl

<http://www.stencyl.com/>

By Stencyl LLC (lead dev Jonathan Chung), released 2011.

Simplified-code 2D game-maker based on MIT media lab's Scratch (see 'Hybrid tools' below), but more adult-oriented and game-centered. Nonetheless, still oriented to facilitate learning, and shares Scratch's unique idea of game design as a sort of educational puzzle solving.

"Game Studio in a Box

Stencyl isn't your average game creation software; it's **a gorgeous, intuitive toolset that accelerates your workflow and then gets out of the way**. We take care of the essentials, so you can focus on what's important - making your game yours.

Publish Everywhere

With extensive platform support, you can rest assured that all players will have access to your game. Today, Stencyl supports: iOS (iPhone/iPad); Android; Windows; Mac; Linux; Flash; HTML5 (experimental)"

Make #1 Games

The best Stencyl games have reached top slots in the App Store and Google Play while being featured under the "Best New Game" section under their respective stores. Our best web games have been sponsored by major publishers such as ArmorGames, Kongregate and Newgrounds.

No Coding Required

Building game logic is literally a snap

Build game logic without coding using our Scratch-inspired block builder.

The Best Drag & Drop Interface

Our drag-and-drop gameplay designer pays homage to the successful MIT Scratch project. We extend Scratch's simple block-snapping interface with new functionality and hundreds of ready-to-use blocks.

Write Code if you want

Power users can create and share their own blocks, extend the engine through code, import libraries and write their own custom classes that interact seamlessly with block-based Behaviors.

Build Worlds

If you're used to graphics editors like Photoshop, you'll feel right at home in the Scene Designer. Familiar features, such as a selection tool, zooming, grid-snapping and flood fill, will help you **quickly craft complex worlds out of Actors, Tiles and Terrain.**

Make Money

Sell Your Game

Bringing your game to the App Store, Google Play or alternate stores like Steam is the best way to make money and reach millions of players. Our best games have brought in enough to allow their developers to quit their jobs and create games full-time.

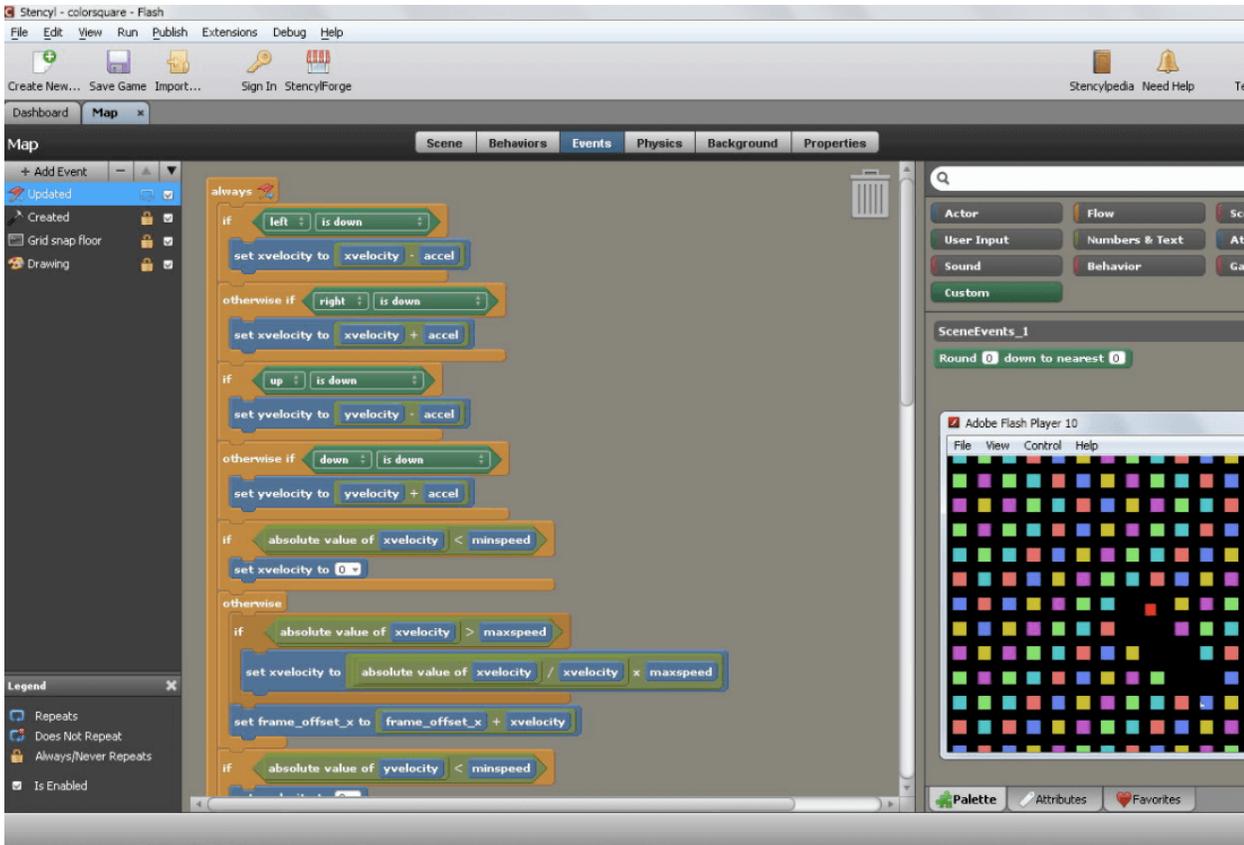
Embed Ads

Games can embed ads as a primary or secondary source revenue. We support iAds and AdMob for mobile games while web games can use Newgrounds. A larger variety of networks (including ad mediation) are supported through extensions.

Sell in-app-purchases to monetize your game.

Sell Digital Goods

Get a sponsorship from Armor Games, Kongregate, Newgrounds.”



WebsiteToolHelper article:

<https://www.websitetooltester.com/en/blog/best-game-engine/#construct>

“A few years ago, MIT (the Massachusetts Institute of Technology) developed a visual programming language called **Scratch**. It’s a fun method to teach students how code works without overburdening them with too much technical knowledge. The way it works is more like a puzzle, where you have to find the right pieces to create actions and reactions in your software. Well Stencyl is based on this model, and as such is an excellent way to create a simple game without coding, but in a way that should give you a good understanding of how coding works! Unfortunately, it is **very limited at the moment**, so don’t expect to build anything but a basic 2D game (although some people claim you could build Stardew Valley with it).

Good for **Notable examples**

2D Action Horror Lakeview Cabin

2D Platformers Ghost Song

| | |
|------------------|-------------------|
| 2D RPGs | Reaching Finality |
| 2D Arcade Games | Mibibli's Quest |
| 2D Tower Defense | NeoCon TD |

Pros:

- Good for simple games
- Teaches the basics of code
- Has "Kits" (ready made templates)
- Create pixel art in it
- Has little marketplace
- Exports natively for multiple platforms

Cons:

- Subscription model
- Limited features
- Not ideal for smartphone games"

Wikipedia entry: <https://en.wikipedia.org/wiki/Stencyl>

Youtube tutorial: <https://www.youtube.com/watch?v=Evo-fd2Swog>

30. TIC 80 tiny computer

<https://tic.computer/>

By Vadim Grigoruk (nesbox), supported by the Itch community, published 2016 and still being developed (current version: 0.603).

"TIC-80 is a fantasy computer for making, playing and sharing tiny games.

There are built-in tools for development: code, sprites, maps, sound editors and the command line, which is enough to create a mini retro game. At the exit you will get a cartridge file, which can be stored and played on the website.

Also, the game can be packed into a player that works on all popular platforms and distribute as you wish. To make a retro styled game the whole process of creation takes place under some technical limitations: 240x136 pixels display, 16 color palette, 256 8x8 color sprites, 4 channel sound and etc.”

Games made with TIC 80: <https://itch.io/c/110298/games-made-with-tic-80>
TIC bundler – <https://nesbox.itch.io/bundler> - another sub-tool by nesbox. “With TIC bundler you can create html and native builds of your game for TIC computer.”

Nesbox Itch page - <https://nesbox.itch.io/tic>

Nesbox github page - <https://github.com/nesbox>

31. Tinsel

<https://github.com/lazerwalker/tinsel>

Tinsel is a game engine and hosted web service that enables the **creation of telephony-based interactive audio experiences. If you want to make something that uses a touch tone dial pad for input and either text-to-speech or recorded audio for output, Tinsel might be the tool for you!**

Although it wasn't built using Tinsel, Here And There Along The Echo is a great example of the sort of experience you could use Tinsel to build.”

32. ToonTastic

By Google (originally developed by Launchpad Toys, whom Google acquired mostly for this app)

<https://toontastic.withgoogle.com/>

“Who?

Future authors, directors, musicians, inventors, and anyone else who wants to turn their brilliant ideas into 3D cartoons

What?

With Toontastic 3D, you can draw, animate, and narrate swashbuckling adventures, breaking news stories, science reports, and all your other wacky ideas

Why?

Here at Google we want to give storytellers of all ages a megaphone to share their creativity with the world”

Adapted to a 3D animation app on 2017:

<https://techcrunch.com/2017/01/12/googles-toontastic-storytelling-app-for-kids-goes-3d/>

33. Versu

<https://versu.com/>

“Versu is an innovative platform for interactive stories. Currently available is Blood and Laurels, a thriller and political intrigue set in ancient Rome. Other games are coming, in other genres, from comedy to romance to young adult fantasy.

Versu focuses on character interaction as its primary form of play.

The Versu platform can do rooms, objects, movement, and the “medium-sized dry goods” interaction of a typical interactive fiction engine, but it’s primarily designed for interactive stories about people: how they act, how they react to you, how they talk to you and talk about you, the relationships you form with them. The social landscape in which you act is constantly changing.

Versu uses an AI engine designed by Richard Evans, the lead AI designer for Sims 3, which allows each character in a story (and in some cases a drama manager AI) to act autonomously or be played by a human player.

Because there’s a strong social model at work in Versu, it’s **possible to form relationships with characters that the story author did not explicitly create.** In play, you can decide you want to pursue a romance or make an enemy, and that outcome can occur even if the author did not write an arc specific to those two characters.

Versu has a choice-based interface, but it’s very unlike standard CYOA.

At any moment in the story, you can choose to act, or wait for others to act. If you choose to take action yourself, you’re offered a set of options drawn from the world model at that moment, from taking a bold stand to giving someone a significant sideways glance. Just about everything you can do affects your character’s opinion of the other characters, and theirs of you, altering the playing field for what’s to come.

Versu allows for characters who act distinctly.

“A social model is only interesting for building fiction if it doesn’t make everyone act like identical automata. In Versu, different characters are built with different abilities and parameters — not a handful or a few dozen character traits, but a potentially infinite range of quirks and habits. It is possible to craft social behaviors that are unique to just one character — giving one guy the ability to get under people’s skin more than anyone else, say — or to make a character who hates being in a crowded room.

In addition, **because characters are defined as separate entities in this way, they could be transferred from one story context to another**, and even cast in stories that weren’t specifically written for them.”

— Emily Short

34. Visionaire

<https://www.visionaire-studio.net/?lang=en>

By the German Visionaire studio

NOW ANYONE CAN CREATE AN ADVENTURE GAME WITH VISIONAIRE STUDIO!

Easy!

Visionaire empowers you to create adventure games without requiring programming skills. It provides a clear layout and an intuitive user interface.

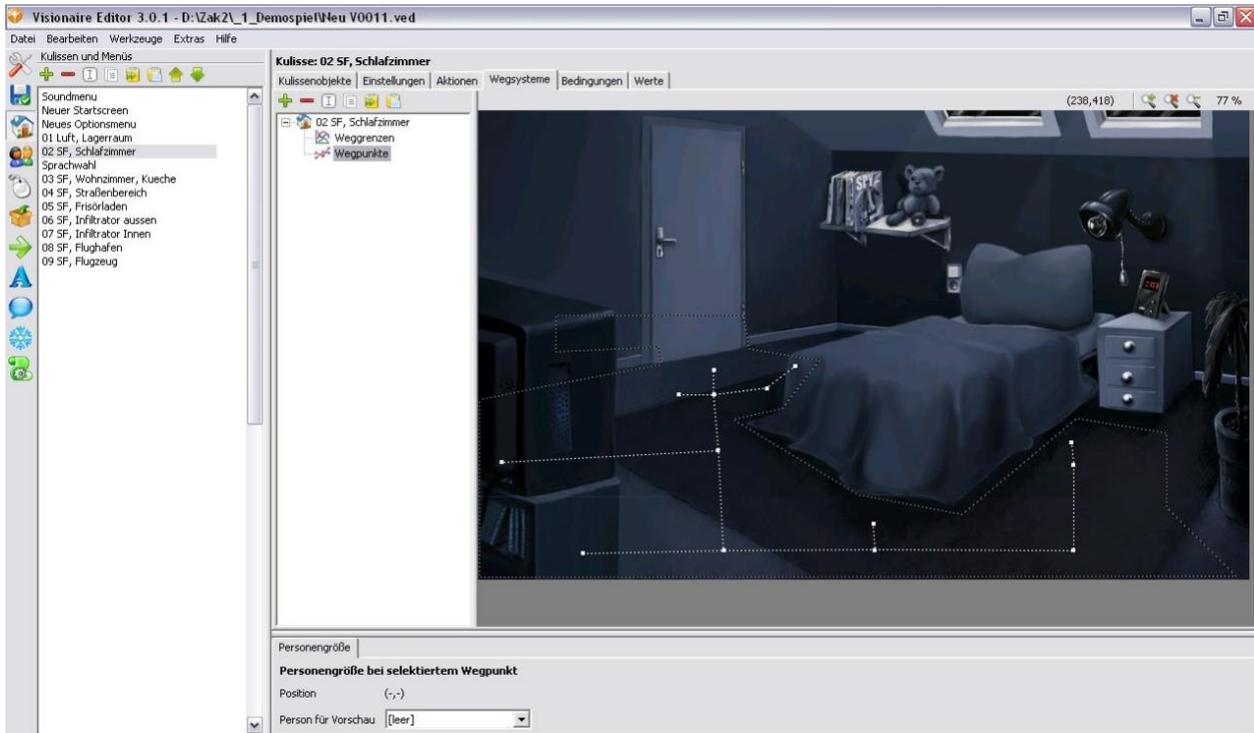
Sophisticated!

Game developers rely on Visionaire, with great success. Many award winning games have been created using Visionaire Studio.

Powerful!

Use stunning effects like particles, masks, shaders or parallax scrolling. Visionaire Studio provides everything to create a cool game.

Program costs 50 dollars. Version 5 published on November 2017.



“CREATING ADVENTURE GAMES IS CHILD'S PLAY

If you want to develop an adventure, Visionaire Studio is the best engine for you, because Visionaire Studio was developed specifically for this purpose and provides all the tools that you need to become a great adventure game developer.

Visionaire allows you to develop a perfect adventure game setting, similar to classics such as Monkey Island, Day of the Tentacle, Fate of Atlantis or Deponia. That's why Visionaire Studio Adventure Games become successful.

INVENTORY

BE FLEXIBLE WITH YOUR INVENTORY BAR

Do you want a classic SCUMM bar at the bottom of the screen? A bag or any other modern solution for your inventory? No problem at all. Visionaire provides the variety and flexibility you require for your tailored adventure game.

INTERFACE

REALIZE THE CONTROL OF YOUR CHOICE

Whether retro inventory bar a la "SCUMM" or modern control interface using 1-Click. YOU have the tools available to make the desired controls for your game.

RETRO GAMES

SUITABLE EVEN FOR RETRO ADVENTURE GAMES WITH PIXEL OPTICS

Visionaire gives you all the support you need in order to develop pixelated (Retro) Adventures. To this end, we have provided functions to upscale, without the image becoming distorted.

EFFECTS, MOODS, MASKS

AND PARTICLES

Visionaire Studio provides you with a particle system, with which you can create and activate effects such as snow, rain, fire or fog. With this, you can create a great mood and a denser atmosphere.

LUA SCRIPTING

STAY FLEXIBLE

If you are a more experienced developer and you want to use programming, to utilize your experience, improve your game and add more variation. You can use the flexible LUA scripting editor within the visionaire tool.

35. WOLF RPG Editor

<http://www.moddb.com/engines/wolf-rpg-editor>

Very popular Japanese RPG-maker tool, released in 2015 by SmokingWOLF. English version is now being translated. Seems like it has a good and unique structure based around a WYSIWYG interface.

“SmokingWOLF (SilverSecond) is the Developer and Creator of the WOLF RPG Editor, which is a free WYSIWYG(What You See Is What You Get) RPG Maker software. They've had silversecond.net up and running since 12/24/1998, and they have been providing gamers and game creators with their WOLF RPG Editor as well as other assets for people in Japan.”

WOLF RPG Editor is the free alternative to other RPG Maker software.

<https://www.youtube.com/watch?v=FgYkcf7GvKo>

Youtube tutorial

Dead IDN-related game engines

Comme-il-faut

Developed in the University of Santa Cruz, 2011. Generator of social interaction modeling, similar to the system used in Mateas' *Prom Week*.

Adapted into the newer Ensemble engine by the University of Santa Cruz team.

http://iris.ofai.at:7777/iris_db/index.php/publications/show/324

McCoy, Joshua, et al. "Comme il Faut: A System for Authoring Playable Social Models." AIIDE. 2011.

Abstract: "Authoring interactive stories where the player is afforded a wide range of social interactions results in a very large space of possible social and story situations. The amount of effort required to individually author for each of these circumstances can quickly become intractable. The social AI system Comme il Faut (CiF) aims to reduce the burden on the author by providing a playable model of social interaction where the author provides reusable and recombinable representations of social norms and social interactions. Motivated through examples from an in-development video game, Prom Week, this paper provides a detailed description of the structures with which CiF represents social knowledge and how this knowledge is employed to simulate social interactions between characters."

Sullivan, Anne, et al. "Extending CRPGs as an interactive storytelling form." International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2011.

"In this paper we focus on the character interaction aspect. In particular, it describes how we use the Comme il Faut system to support emergent social interactions between the player and the game characters based on player's traits and the social state of the game world."

Scribe

by Ben Medler and Brian Magerko

<https://soar.eecs.umich.edu/workshop/27/Medler.pdf>

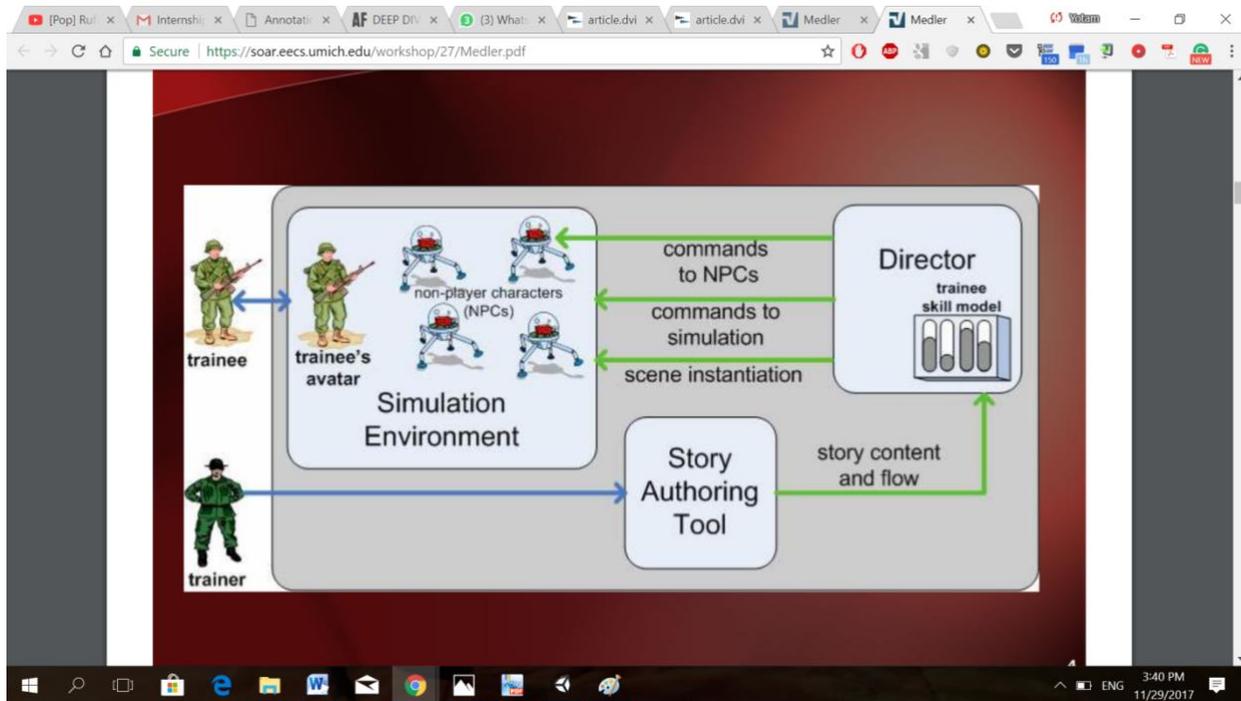
gel.msu.edu/meddler

medlerbe@msu.edu

Seems very much dead and dated. Seems to have had some good theoretical ideas on real-time visualization ('simulation environment) that's simultaneous to authroing, though.

[ADAM lab \(developers\) youtube channel:](#)

<https://www.youtube.com/channel/UCScAsBptLe0qmk0y3Kum9wQ>



- Director-based story management
 - Interactive Drama Architecture (IDA)
 - Intelligent Tutoring
- Directs environment and NPCs based on:
 - Story content
 - Player action
 - Hypothesis of player skills
- Selects and instantiates abstract content for dramatic and pedagogical reasons

The Scribe Authoring Tool

- Built for authoring interactive narratives
 - Provides visual connection to underlying story logic
 - Designed for subject matter experts (SMEs) to produce story / scenario content
1. Generality – Standardize means of representing multiple environments – Linking with multiple architectures
1. Usability – Error checking, efficiency, and is easy to use for non-programmers
 2. Pacing and Timing – Timing of events that can be controlled by the author
 3. . Enables Debugging – Debugging content inside of the production tool

- Story Creation items: • Plot Points - Main story points (i.e. scenes) • Actions - Make up plot points, hold actions for a plot point to perform • Skills - Variables representing trainable skills of the player

- Plot Point

- Initialization

- Logical sentences

- Planning preconds or director actions

- E.g. Location() vs. Spawn()

- Events

- Actions during the plot point

- The main story actions that the player

experiences

- Finalization

- Logical sentences

- Planning postconds or director actions

- Partial ordering links

- Plot Point Timing – Events given temporal attributes

- Author communicates with Director Agent while stepping through created story content inside of Scribe

XML standards for communication

Interactive Drama Architecture \Haunted 2\ Visual SOAR

By Brian Magerko

[The underlying theoretical framework & initial prototype for the narrative architecture Magerko built Scribe in order to develop into an authoring tool.](#)

In his Phd thesis and previous publications, Magerko created an architecture for an interactive drama manager that programs events and AI agents in accordance to author-defined narrative goals (modeled after improvisational theater). The system was tested in a prototype game, *Haunted 2*, also utilizing the pre-existing SOAR architecture for character modeling, developed by the Soar Games Group at the University of Michigan, who also created this game.

The SOAR environment had some limited-function authoring tools utilized by Magerko, the central one being “visual soar” – for game graphics and character creation (version 4.0 last updated 2002)

Link: <http://web.eecs.umich.edu/~soar/sitemaker/projects/visualsoar/>

Speculating on the need for an authoring tool: “An authoring tool could be constructed to help shorten this process by providing a simulated representation of the environment that the author could directly manipulate. With this tool, the author would be able to specify a desired world state in this simulated world (e.g. moving objects and characters around into a specific configuration in the world, changing their attributes, etc.) then query the director to see how it responds to the situation. The director’s proposed or selected actions could be reported to the author in the tool, thus quickly informing her how the director would behave in a given situation. This would provide an immense reduction in the time needed to debug director strategies for a particular domain. The same tool described above could be extended to authoring plot points in IDA. A common process for writing story content currently involves writing a plot point in English on paper, then encoding it as a production in Soar (as shown in Figure 20), running Haunt 2 and seeing how the plot point worked, and iterating as a debugging process between changing Soar code and running Haunt 2. For someone who is very familiar with Soar this process is still a time-consuming one during the debugging phase.”

B. Magerko. Player modeling in the interactive drama architecture. Ph.D. Dissertation. Department of Computer Science and Engineering, University of Michigan. 2006.

B. Magerko. Story representation and interactive drama. In 1st Artificial Intelligence and Interactive Digital Entertainment Conference (AIIDE05), 2005.

B. Magerko and J. E. Laird. Building an interactive drama architecture. In First International Conference on Technologies for Interactive Digital Storytelling and Entertainment (TIDSE03), pages 226–237, 2003.

B. Magerko and J. E. Laird. Mediating the tension between plot and interaction. In AAAI Workshop Series: Challenges in Game Artificial Intelligence, pages 108–112, 2004.

StoryBricks Engine

<https://www.polygon.com/2014/7/28/5929187/hearthstone-storybricks-storytelling-engine-ai-director-blizzard>

“Brian Schwab is a former Blizzard employee best known for his work as senior AI and gameplay engineer on Hearthstone, but now he has moved on to experimental territory, he tells us. After working at the gaming behemoth for half a decade, Schwab has since joined a small London-based team to develop what they hope is the next step in the evolution of narrative games.

The result, they tell us, could bring emergent narratives to games at a fraction of the cost required to make the next Walking Dead release.

[...]

HOW TO FORCE STORYTELLING TO EVOLVE

It's called Storybricks, the team tells Polygon: It's an AI storytelling engine that gives developers the ability to create and control narratives with highly complex branching story arcs. First announced at this year's Game AI Conference 2014 in Vienna, the engine, they hope, will offer new and practical solutions to some of the long-standing problems of designing interactive stories."

StoryBricks expo talk video: https://www.youtube.com/watch?v=id-3sUo_DFU

<https://www.gamespot.com/videos/narrative-legos-with-ken-levine-gdc-2014/2300-6417876/>

Talk by Ken Levin that mentions StoryBricks

<https://techcrunch.com/2015/03/08/game-over/>

Storybrick closes in 2015, after botching an over-ambitious kickstart campaign, cancelling a deal with Everquest, financial difficulties: "“We were too much of a tech company for the gaming industry, and too much of a gaming company for the tech industry”.

Additional notable game engines (not focusing on):

There's an almost infinite number of game engines and game creator tools (see Werning's soon-to-be-published book), we cannot possibly list them all, nor are we attempting to. The above engines are listed either due to immense popularity and use by the community of practice to make narrative-oriented plugins and narrative games (Unity, Unreal, GameMaker Studio, Ogre), or due to some ingrained functionality or UI component that is particularly narrative focused (Corona, GODOT) or of particular interest for IDN (Shiva).

Further popular engines include:

2D and mobile:

AppGameKit (2011) - <http://www.moddb.com/engines/app-game-kit>

Cocos (mostly smartphone games) - <http://www.cocos2d-x.org/>

Marmalade (mostly platform games)- <https://marmalade.shop/en/>

Pygame (cross-platform Python game creation modlues, 2000) -

<https://en.wikipedia.org/wiki/Pygame>

Retro 8bit game creator: <https://pixelvision8.itch.io/game-creator>

Spring RTS Game Engine - <https://springrts.com/>

Buildbox (very useful and gaining popularity with newcomers, heavily templated and tends to lead to making game clones): <https://www.buildbox.com/>

Wimi5 – online HTML game editor with visual scripting - <http://wimi5.com/>

3D:

001 Game Creator (geared towards amateurs, heavily templated, dated):

<http://www.engine001.com/>

Open Morrowind\MW (2008): <http://www.moddb.com/engines/openmw>

Blender Game Engine (2000): <http://www.moddb.com/engines/blender-game-engine>

Id Tech 3 (developed from Quake 3 Engine, 1999) - <http://www.moddb.com/engines/id-tech-3>

Id Tech 4 (Doom 3 engine, 2003) - <http://www.moddb.com/engines/id-tech-4>

Drag(EN)gine (unreleased, gaining hype)- <http://www.moddb.com/engines/dragengine>

Darkplaces Engine (2000) - <http://www.moddb.com/engines/darkplaces-engine>

Leadwerks Game Engine (2014) - <http://www.moddb.com/engines/leadwerks-engine>

X-Ray Engine (2007) - <http://www.moddb.com/engines/x-ray-engine>

Skyline (beta) – full release coming soon, drag and drop interface, growing community, OSVR support, seems promising <https://home.aurasoft-skyline.co.uk/>

A.II. Hybrid text + graphic tools

Integrating the academic and sub-category tools into this list will probably require a hybrid category, with another sub-list of hybrid tools following the visual novel makers.

C.II - Visual Novel Tools

36. Omega Visual Novel Engine

<http://vnengine.com/>

Published 2007 by The Local Group

“The Big Idea

There is a growing market for visual novels. We all can't get enough of games that offer you the satisfaction of reading a book while immersing you in a story using sounds and stunning visuals.

Well we thought about it, and realized that people like to read visual novels everywhere. On the bus or on the train, or even just simply on their desktop. Wouldn't it be cool if we could play all the old classics we love on our smartphone or tablet on the go?

Our main goal is to help bridge the gap of creating your own visual novels or translating existing ones. We believe the author can provide a better experience for their readers if they spent more time on the content and LESS time on the engine that runs it.

With the Om3ga Visual Novel Engine, you don't need to learn an entire programming language to get started and any game you make or translate will seamlessly work across all supported platforms with NO extra configuration needed from you. Take a look around, if you feel you would rather have a certain feature than don't hesitate to click that contact tab up there and tell us about it!"

<https://the-local-group.itch.io/vnengine>

<http://vnengine.com/documentation.html>

“FEATURES:

- Multi-platform! (Make your game once, run it on all supported platforms)
- Create and share your own visual novels!
 - > Easy to use tagging system that lets you create visual novels without any programming skills.
 - > Easy uploading to share and update your visual novels.

- Download and play visual novels that other people create!
 - > Simple list of FREE visual novels that are easy to download
 - > Play all your visual novels offline!
 - > Save states and load states for saving and loading your progress for each visual novel

- Cloud
 - > Save your progress to the cloud and load it on other devices you are logged in to

This app creates a "VNE" folder on your PC when creating your own visual novels.”

37. Kirikiri\Kirikiri Z

<https://github.com/krkrz/krkrz>

Kirikiri Z is the open source version of the by-now defunct Kirikiri visual novel engine, that launched in 1998 and was quite popular. Z version seems quite good and gaining traction.

From Wikipedia entry “list of visual novel engines”

https://en.wikipedia.org/wiki/List_of_visual_novel_engines

“KiriKiri (吉里吉里) is a scripting engine[3][4][13] by Japanese developer "w.dee", initially released in 1998. It is almost exclusively used with the KAG (KiriKiri Adventure Game System) framework as a visual novel engine.[14] Usually, the package of the two components is regarded

as the whole engine, and referenced with major version numbers. Thus, the current version is called KiriKiri2/KAG3. It is available under the GNU General Public License, though commercial licenses can be acquired if somebody wishes to expand the software without disclosing the changes.

KiriKiri has been used in both dōjin and commercial visual novels, the most well known of which are TYPE-MOON's Fate/stay night and Fate/hollow ataraxia. It is often used as a more modern and expandable replacement of the older NScripter engine.[15][5][13] Another game notable visual novel that is known to be implemented using this engine is 1999 Christmas Eve (1999クリスマススイブ). The Nekopara game series available on Steam also uses a modified version of Kirikiri.[16]

Due to a lack of updates since October 2010, from 2013 onwards the code has been forked and continued as Kirikiri Z (吉里吉里Z).[17]”

2017 tutorial: <https://lemmasoft.renai.us/forums/viewtopic.php?f=57&t=43795>

Charlie Hargood's student, Sam Lynch, made a similar, slightly more interactivity-oriented visual novel\text-based game tool at ICIDS 2017. [Locate paper!](#)

38. NScripter\OneScripter

Seems inactive and dated compared to other Japanese visual novel tools, but historically important.

<http://nscripter.insani.org/>

Welcome to our support site for the Japanese visual novel scripting engine and its open-source (GPL) counterpart, ONScripter. During its heyday, NScripter was one of the single most dominant visual novel scripting engines on the market -- only AVG32/RealLive could be said to have enjoyed as much popularity as NScripter did. As a brief measure of the kind of impact that NScripter had on this market, consider the following games -- 月姫 (Tsukihime), 銀色 (Gin'iro), みずいろ (Mizuiro), 月は東に日は西に～Operation Sanctuary～ (Hanihani); these were all created using NScripter. In this day and age, companies seem to prefer to build their own engines than to use NScripter, and for that matter NScripter itself has not seen any development in several years. However, that is not to say that games that utilize NScripter are no longer made - - in fact, one of the most notable recent visual novel releases (as of May 2005) happens to have been built with NScripter: サナララ (Sa-Na-Ra-Ra) by Nekonekosoftware.

ONScripter, written by Ogapee, is a GPL'd clone/replacement for Nscr.exe (the NScripter runtime executable), is built on SDL, and is easily portable to any number of operating systems. Its compatability with existing NScripter games tends to be quite good, other than the fact that there does not presently exist any top menubar functionality. We at insani are actively working with Ogapee to improve ONScripter -- and you can see what we're up to here.

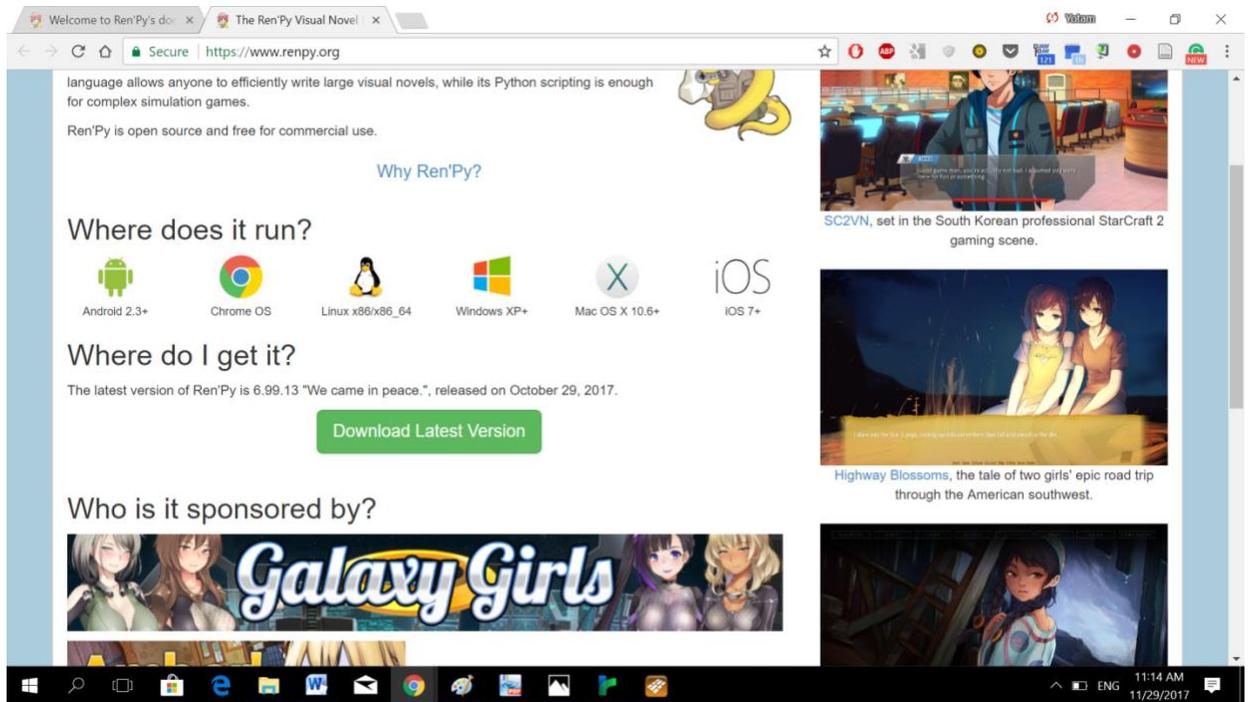
39. Ren'Py

<https://www.renpy.org/>

Extremely alive. Text-based visual novel tool, that doubles to run more interactive simulation games. Very popular in Japan, and seems to be used mostly for manga-style aesthetics and narrative fomulas. Open-source – one ICIDS workshop presentation was about Charlie Hargood's student who built a more interactive visual novel engine based on Ren'Py's code (or a Ren'Py extension?)

Ren'Py is a visual novel engine – used by thousands of creators from around the world – that helps you use words, images, and sounds to tell interactive stories that run on computers and mobile devices. These can be both visual novels and life simulation games. The easy to learn script language allows anyone to efficiently write large visual novels, while its Python scripting is enough for complex simulation games.

Ren'Py is open source and free for commercial use.



Why Ren'Py?

Ren'Py is a free and cross platform engine for digital storytelling. It makes it easy to combine words, images, and sounds to create visual novels and life simulation games.

Visual novels are computer-based stories that are told through words, images, sounds, and music. Many visual novels also present the player with menu choices that allow the player to control how the story is told.

Ren'Py's script language makes it easy to write visual novels, and other writing-heavy games. It's easy to learn, and scales well to the largest projects. Even without customization, Ren'Py provides the features players have come to expect from their visual novels.

Life Simulation games, such as management and dating sims, are more interactive games that mix story with gameplay. Ren'Py's screen language allows one to create complex interfaces, while its support for the Python scripting language allows for complex game logic, if that's what your project requires.

Free and Open Source

Summer Session is one of many commercial games made with Ren'Py.

Ren'Py has already been used with a half-dozen commercial games, and more are on the way.

Ren'Py games have been digitally downloaded millions of times [...] and sold at conventions from Texas to Tokyo. We think it's important the maker can choose how his or her work is distributed.

Cross Platform - Computer and Mobile

One of Ren'Py's biggest advantages is that runs on almost every computer. There are three primary platforms we support:

Windows XP+ (x86)

Mac OS X 10.6+ (x86_64)

Linux (x86, x86_64)

Ren'Py games are not dependent on any other software on these platforms. Android (2.3+) and iOS (7+) are supported as a secondary platforms.

[...]Ren'Py allows visual novels to be written in a simple scripting language. [...]Working Ren'Py script doesn't require much extra typing when compared just simply typing in the script for the game. It even lets you abbreviate character names, letting you write m instead of "Mary".

Ren'Py lets you define characters and images in a central place, making it easy to change the game. Scripts also provide consistency, ensuring that the placement of text and images does not inadvertently change throughout the game.

Unlike other engines that force you to use particular tools, the Ren'Py script language works with whatever text editors and other tools you choose. While we include the jEdit text editor, there's nothing forcing you to use it if you have another editor you like better. Other third-party tools can check your game's spelling, or show you the differences between two versions of the game.

Since Ren'Py's scripting language is text based, it can be typed out on any keyboard. Not having to switch back and forth between the keyboard and mouse helps increase productivity, especially when producing large projects.

Features Players Want:

Preferences Screen

Ren'Py includes, by default, all of the features a user expects from a visual novel game. **While most of these features can be customized or disabled if desired, by default each new game has:**

A main menu that lets the user start a new game, load a game, or adjust settings.

A game menu that lets the user load, save, and adjust settings.

Automatic saving of games.

Rollback, the ability to go back in time to see previously shown screens. The user can even make different choices the second time around.

Predictive image loading, which loads images in the background.

Support for controlling the game using the mouse, keyboard, or gamepad.

The ability to pick if the game runs in fullscreen mode, or in a rescalable window.

The ability to skip through text when replaying, including the ability to skip only text that's been read.

The ability to auto-advance text without having to hit the keyboard. This adjusts to the amount of text being shown, so longer text sticks around longer.

The ability to hide text, so that the user can see the pictures behind it.

The ability to independently change music, sound effect, and voice volume.

Easy to Customize and Localize

[...]

There are many ways a creator can customize the look and feel of Ren'Py:

[...]

The style system allows the creator to customize the look of text, buttons, bars, and other interface components.

Ren'Py's screen language makes it possible to control the layout and behavior of every screen of the user interface.

The same functionality is made available to Python code, for games that might choose to change their interface at runtime.

[...] With proper fonts, it supports any language that doesn't require ligatures, and some that do.

Powerful Effects

The Ren'Py Tutorial shows how to use the Animation and Transformation Language in conjunction with a few images to create a movie-like experience.

Ren'Py can take advantage of hardware acceleration on supported computers, while falling back to software support when it's not. This acceleration makes it possible to apply sophisticated effects to high definition images.

The Animation and Transformation Language included with Ren'Py makes it possible to animate images, move them around the screen, rotate them, adjust their scaling, and adjust their opacity. All of these can easily be changed over time.

Ren'Py ships with dozens of customizable transitions that can be invoked when a scene changes. In addition to a full set of slides, wipes, and moves, this includes:

Pixellation of the old scene, and unpixellation of the new one.

Fades to black (or another color), and then to the new scene.

Dissolves of the whole screen from one scene to another.

Image-controlled dissolves, which use an image to control which portions of the screen dissolve in first. This has been used as the basis for a variety of powerful effects, from blood spatters to transporter beams.

Ren'Py also supports the playback of movie files.

Ren'Py is compatible with assets in a variety of popular formats

Well Supported

Hundreds of games have been released with Ren'Py, making it one of the most widely used visual novel engines in the world.

[...] The best place to go for support is the Ren'Py forum at the Lemma Soft Forums, which has more than 56,000 posts in over 9,500 threads. (Figures accurate as of September 2014.)

<http://paperdino.com/2013/05/27/hey-i-made-another-game/>

Save the Date – game made with Renpy on by an enthusiast game designer, on his first try with the tool.

40. RenJS

<https://lunafromthemoon.itch.io/renjs>

<https://gitlab.com/lunafromthemoon/RenJSTutorial>

Published on Itch at 2017 by “lunafromthemoon”

“RenJS is a new videogame engine for making Visual Novels that run directly in the web browser. Based on Ren'Py and powered by PhaserJS, it's easy to use and easy to extend.

In this tutorial game, made with RenJS itself, you can learn the basics to start writing your own game. (playable video tutorial ingrained in webpage)

Currently working on the official documentation (you can find an incomplete version here: <https://lunafromthemoon.github.io/RenJS/>) and open to feature suggestions.”

41. RLDev

<http://dev.haeleth.net/rldev/manual.html>

<https://tlwiki.org/?title=RLdev151>

What’s left of AVG32\RealLive. Even more historical and dated than NScripter.

“ First there was Haeleth. Then there was Kpac, an unofficial toolkit for **AVG32**, a visual novel game **engine** developed and licensed by VisualArt's. Over time, **AVG32** was superceded by the**RealLive** virtual machine and Kinetic, a specialized variant which featured additional encryption and obfuscation.”

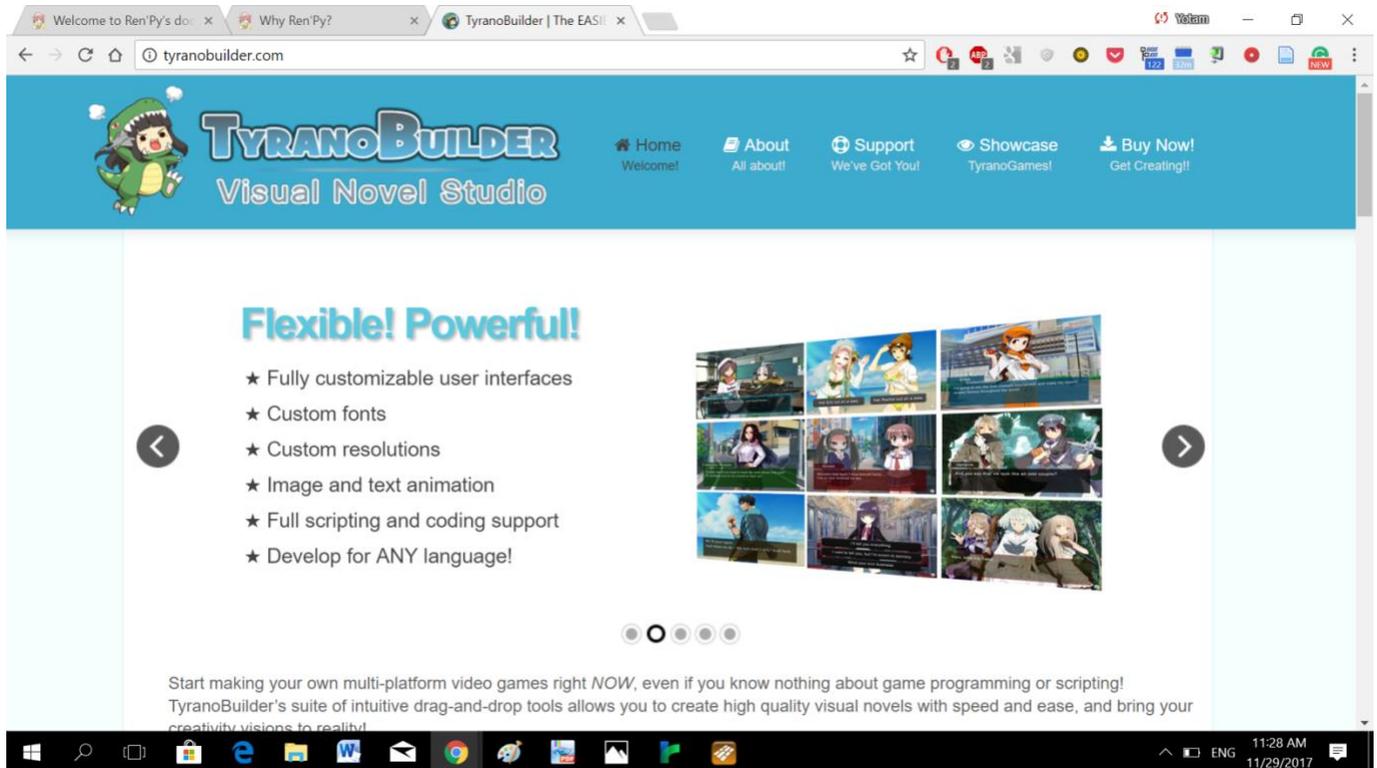
42. TyranoBuilder

<http://tyranobuilder.com/>

Visual novel studio

Somewhat alive. Seems like a similar but lesser version of Ren'Py. Not particularly interesting.

Start making your own multi-platform video games right NOW, even if you know nothing about game programming or scripting! TyranoBuilder's suite of intuitive drag-and-drop tools allows you to create high quality visual novels with speed and ease, and bring your creativity visions to reality!



Dead Tools

Novelty

Visual novel maker

<http://www.visualnovelty.com/>

“Novelty is a tool for creating your own visual novels and 2D games.”

Easy to use WYSIWYG visual novel editor.

Visual point & click programming with "Actions".

No actual programming required.*

Create and share art assets easily.

Hardware-accelerated graphics.

Play your visual novels in and out of the editor.

Compatible with Windows XP/Vista/7.”

Still in beta (apparently since 2010), seems dead and not that interesting – can be abandoned.

Other Hybrid Tools

43. The Adilebrum Engine\ADELENGINE

<https://www.adliberum.com/engine/141/>

http://store.steampowered.com/app/657180/The_Adliberum_Engine_ADELENGINE/

Text-interaction based RPG engine. By Liam Twose\Adilebrum game dev company, still in development, dev version launched on Steam May 2017, latest Steam release January 21st

<https://www.adliberum.com/engine/141/>

“A homage to Text Adventures and Multi-User Dungeons of old... The Adliberum Engine is a text-powered sand-box roleplaying engine offering single player, multiplayer or co-op experiences. Complete with world editing commands; create worlds, games and puzzles that you can share or play with others“.

“The Adliberum Engine is a text-powered sand-box roleplaying engine offering single player, multiplayer or co-op experiences. Complete with world editing commands; Create worlds, games and puzzles that you can share or play with others all in real-time. ADELENGINE features an easy to use scripting language allowing you to construct anything you can imagine simply by describing it; offering both Freedom of Play and Freedom to create.

It's like Minecraft, but with text!

Create rooms, set events, build objects and more.. Paying homage to the classic text adventure and to Multi-User Dungeons of old; dust off that keyboard and get ready to build, take, drop, unlock, open, close, use, eat, drink, push, pull (and much more) once again, all with the added third dimension of multiplayer!”

Youtube intro video: <https://www.youtube.com/watch?v=HN-fYHF-N3c>

44. ASAPS

By Hartmut Koenitz

Alive – used by Koenitz in classes. Only known paper that overviews and compares works produced with an authoring tool was written by Koenitz on ASAPS. Better UI is being developed.

About: “The Advanced Stories Authoring and Presentation System, or ASAPS, originated from the Advanced Stories Group (ASG) at **Georgia Tech**, which was founded by **PhD student Hartmut Koenitz in 2005** and supervised by Dr. Janet Murray. **The goal of the ASG was to extend the**

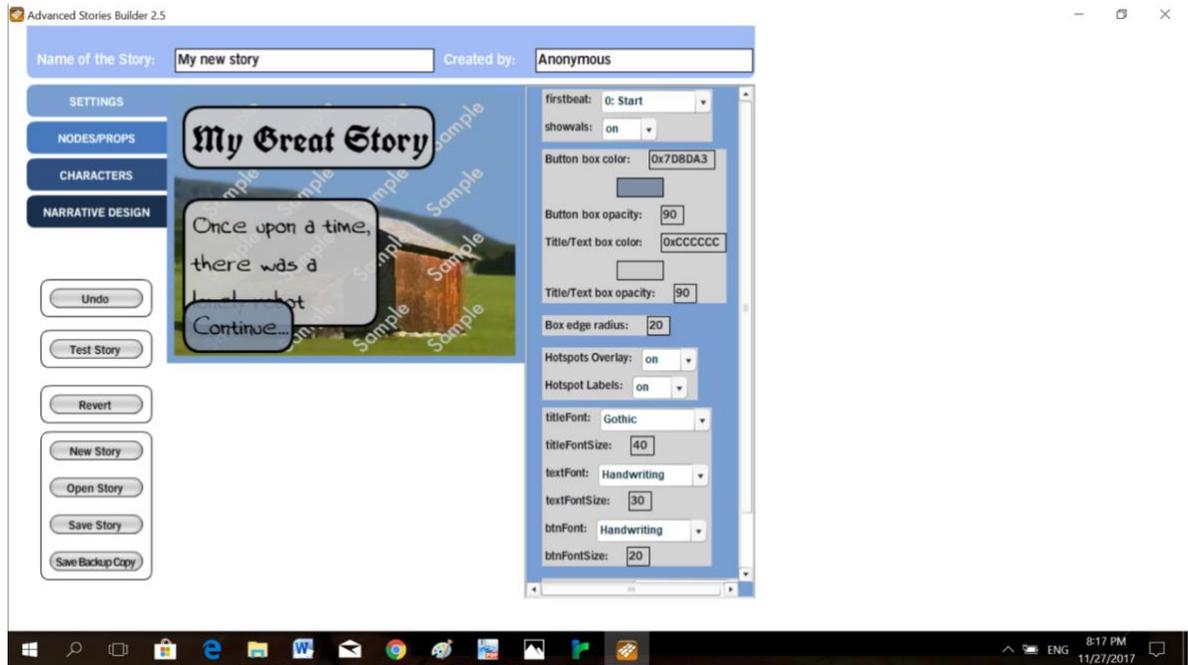
practice and understanding of interactive storytelling by creating a formal structure for describing and authoring interactive stories, and to create exemplary stories that illustrate the expressive possibilities of the form. In creating ASAPS, Dr. Koenitz asserts that **interactive stories are a new format of expression, that shares some of the characteristics of existing story formats and some of the characteristics of computer games, but has its own affordances and its own potential for capturing human experience.**

The program that creates these interactive stories, the Advanced Story Builder (ASB), is **an easy-to-use toolset which allows authors to quickly create interactive experiences** such as games, interactive narratives, or training exercises. It can also be used as a rapid prototyping tool for projects that require more elaborate features. The program requires no coding, operates on both Mac and Windows, and works with regular graphics, animation, sound, and video file formats. The story files created in ASB are written in an XML-based markup language (ASML), which can then be played via an ASML Engine that operates in Flash.

To create a story, authors combine “beats”, or atomic narrative units, to create a complete interactive experience. The 14 different beat types include static elements like a title screen, as well as flexible elements, which contain choices in a conversation, for navigation, or for adding items to an inventory. Finally, procedural beats allow authors to manipulate counters, global variables, inventory items, and timers. This inventory of elements, together with audiovisual assets, allow for a wide range of visual styles, such as film-noir, horror, superhero comic, and fantasy.

ASAPS is an ongoing research project. An iOS playback engine is currently in late stage development.”

A map of the "beats", or narrative units, in "The Ship". **Unlike traditional storytelling formats, ASAPS encourages authors to consider multiple paths and outcomes for their story.**



Still officially a beta, inaccessible to public. 130+- products, primarily by Hartmut's students. Subject of only in-depth academic analysis of body of works produced by an authoring tool.

Youtube video – “Hartmut Koenitz introduces his ASAPS”: <https://www.youtube.com/watch?v=L6hDcW7Fj4>

Koenitz, Hartmut. "Extensible tools for practical experiments in idn: the advanced stories authoring and presentation system." International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2011.

Koenitz, Hartmut, and Kun-Ju Chen. "Genres, structures and strategies in interactive digital narratives—analyzing a body of works created in ASAPS." International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2012.

Koenitz, Hartmut. "An iterative approach towards interactive digital narrative—early results with the advanced stories authoring and presentation system." International Conference on Web-Based Learning. Springer, Berlin, Heidelberg, 2012.

Koenitz, Hartmut, Tonguc Ibrahim Sezen, and Digidem Sezen. "Breaking Points—A Continuously Developing Interactive Digital Narrative." *International Conference on Interactive Digital Storytelling*. Springer, Cham, 2013.

45. DreamPath

<http://drakevision.com/projects/dreampath/index.html>

“Gamebook” authoring tool, released 2008 by DrakeVision Software and seems mostly inactive by now.

General Info

DreamPath is an advanced authoring system and a reader of Gamebooks where the game is dynamic and the player chooses his own way (IF/CYOA type)

DreamPath Composer is the authoring system. It provides robust features for making more than just a game book and is not requiring any knowledge of programming.

Instead you will find a friendly user interface to help you make your book and protect you from making mistakes.

DreamPath Storyteller is the reader and is featuring robust and unique interface to enjoy written books.

Overview

- * Book Editing includes RichText
- * Unlimited different paths to choose from on each page
- * Rule Paths: Make the game dynamic by conditioning your paths.
- * Open Paths! Challenging the player with open questions.
- * Dynamic text: Changing text on gameplay.
- * For more advanced books a writer can use rule paths and develop "Battle Systems" and the like.”

<http://www.ifwiki.org/index.php/DreamPath>

46. Episode

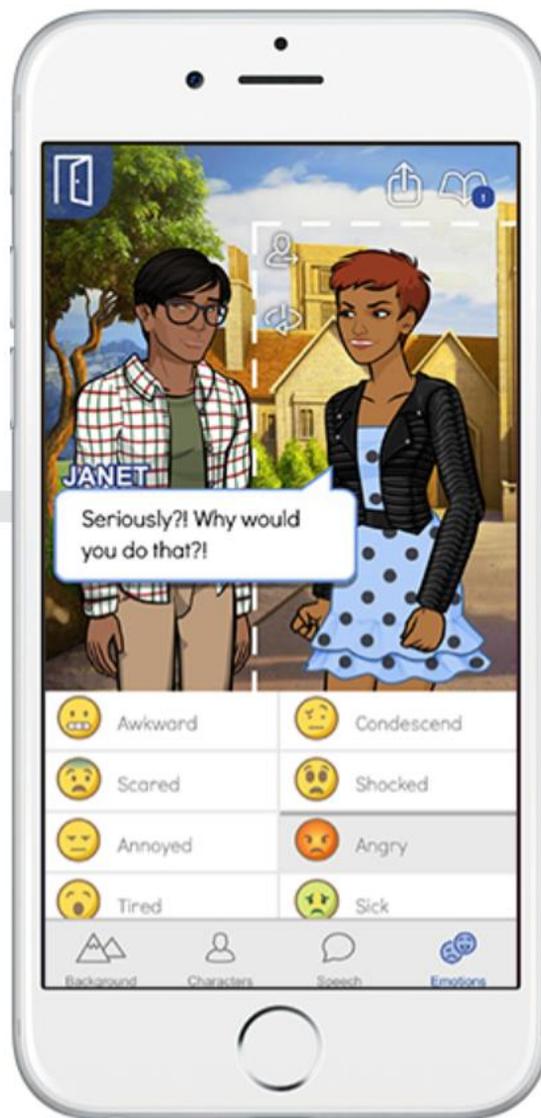
<https://www.episodeinteractive.com/>

EpisodeInteractive is owned by Paramount, and employs “Pretty Little Liars” characters and graphics (a Warner Bros. franchise).

Mobile app that functions as a publishing platform and ‘creator studio’ for visual-novel like content centered on fan-fiction for Hollywood franchises (Mean Girls, Clueless, etc – seems marketed for girls).

Create

You could create the next great Episode story. Make your story on the Episode app or website and share it with millions of viewers on Episode.



“The Episode app is a mobile storytelling network and platform. Episode features interactive Hollywood-

caliber stories built from the ground up for mobile, not the passive entertainment of TV and movies. In Episode, your choices decide the path of your story.

There have been over 4 billion episodes viewed on Episode so far, which adds up to over 76,000 years of combined viewing time! We've also opened up our storytelling platform and have the world's largest community of interactive stories and storytellers, with over 8.3 million registered creators and 73,000 stories.

Download Episode on iOS or Android today!"

47. Expressionist

<https://www.jamesryan.world/projects/#/expressionist/>

Generative tool by James Ryan, presented at ICIDS 2016.

"Expressionist is an authoring tool for text generation in games.

Influenced by Kate Compton's Tracery, Expressionist is intended for non-procedural authors and utilizes generative grammars, which yield huge amounts of content with relatively little authoring effort.

Where this tool diverges from Tracery is in its tagging affordance: authors can attach tags to chunks of content, and whenever chunks are used to build larger units of content, the result comes packaged with the tags of all the components.

This ends up being powerful in two ways. First, it enables content understanding: generated content now comes packaged with author-defined tags about things that matter in the author's game, which means that the computer can actually understand that content and do something accordingly (e.g., use its tags to update the game state). Second, it enables targeted generation: a game engine can request the kind of content it wants by specifying the tags that the content should come packaged with upon being generated.

As such, Expressionist allows authors to quickly define content bases comprising billions or trillions or more outputs, each of which can be a) understood by the computer and b) furnished on-demand (by requesting the meaning of the output).

Expressionist has been used in two released games, is being used in several ongoing projects, and its technical approach is implemented in the Spirit AI Character Engine.

<http://spiritai.com/product/character-engine/>

Status: Pre-alpha available upon request; alpha coming soon (2014-)

Contributors: Tyler Brothers, Ethan Seither, Jacob Garbe, Johnathan Pagnutti

Publications:

Ryan, James, et al. "Expressionist: An authoring tool for in-game text generation." Interactive Storytelling: 9th International Conference on Interactive Digital Storytelling, ICIDS 2016, Los Angeles, CA, USA, November 15–18, 2016, Proceedings 9. Springer International Publishing, 2016.

https://www.researchgate.net/publication/307923836_Expressionist_An_Authoring_Tool_for_In-Game_Text_Generation

Ryan, James Owen, et al. "Toward natural language generation by humans." 8th Workshop on Intelligent Narrative Technologies. AAAI Press. 2015.

https://www.researchgate.net/publication/292437241_Toward_Natural_Language_Generation_by_Humans

Influences: Tracery, Knuth's attribute grammars

https://en.wikipedia.org/wiki/Attribute_grammar

I heard that Ryan is working with Mateas on some sort of world-generation tool (as in, creating a system that functions like some sort of proto-society and just observing it develop autonomically. Not sure if this is the same one.

48. Adobe Flash Professional\Adobe Animate CC

<https://www.adobe.com/products/animate.html>

<https://www.adobe.com/support/flash/downloads.html>

Flash was originally SmartSketch by FutureWave, which added support for frame-by-frame animation in 1995. FutureWave was acquired by Macromedia in 1996, and the API was adapted into Macromedia Flash. Currently in process of being ingrained into the Adobe Animate CC, but still available as an independent IDE until 2020.

Though past its hey-day in the field of game design, Flash remains a beloved and actively used tool for all things animation. Though other programs that import and export the Flash format and more adapted to game design seem better suited, Flash is still used as a game design tool, including for timeline-based narrative games – often in a visual-novel-like format with choice screens and limited animation bits.

Last version of Adobe Animate and Flash Professional – CS6 – released December 2017. Further notable Flash IDEs include FlashBuilder, FlashDevelop, PowerFlasher FDT, Flash Catalyst (for rich internet

applications) and Scaleform. FlashDevelop and Scaleform are particularly suited for game design (see next).

Written in actionscript, exports SWF, FLV and FLA files.

Adobe Animate official quote: "A new age for animation.

Design interactive vector animations for games, apps, and the web. Bring cartoons and banner ads to life. And add action to tutorials and infographics. With Animate CC, you can quickly publish to multiple platforms and reach viewers on desktop, mobile, and TV.

Get Adobe Animate as part of Adobe Creative Cloud for just **US\$20.99/mo.**

Animate just about anything.

The industry's leading animation toolset lets you create apps, ads, and amazing multimedia content that moves across any screen. Small-screen productions. Epic proportions.

Create interactive web-based content for games and ads using powerful illustration and animation tools. Build game environments, design start screens and interfaces, create interactive player sprites, and even integrate audio. **With Animate, you can do all your asset design and coding right inside the app.**

Create characters that come alive.

Sketch and draw more expressive characters with pressure- and tilt-sensitive vector brushes that work like the real thing. Make your characters blink, talk, and walk with simple frame-by-frame animation. And create interactive web banners that respond to user interactions such as mouse movement, touch, and clicks.

Go big on the big screen. Any camera. Any format.

Publish to any platform.

Reach your audience on desktop, mobile, and TV by exporting your animations to multiple platforms, including HTML5 Canvas, WebGL, Flash/Adobe AIR, and custom platforms like SVG. You can include code right inside your projects and even add actions without having to code.

See what new can do.

Animate is always getting better, with new features rolling out regularly. And with your Creative Cloud membership, you get them as soon as we release them. Here are some of the latest updates.

New Features:

Camera and layer depth improvements

The camera tool now enhances the effects from zoom, rotate, and pan so you can create the illusion of depth in your animations by placing assets in different planes.

Actions code wizard

Our new wizard lets you add actions to events for the HTML5 Canvas like animating a character when you click a button.

More powerful Timeline

Now it's even easier to display time along the frame numbers and extend or reduce time for an existing frame span.

Enhanced ease presets

Manage the speed of your animations without all the manual work by creating enhanced ease presets for your tweens."

Adobe Flash Builder (Flex)

Latest version 4 released 2012, latest updated – 4.7 released 2013; no longer under development

"Welcome to Adobe® Flash® Builder™ 4.7. This release of Flash Builder provides new features related to concurrency support, coding productivity, and iOS workflows. We now also provide support for additional platforms like Windows 64-bit and Windows 8."

Wikipedia entry:

https://en.wikipedia.org/wiki/Adobe_Flash_Builder

"Adobe Flash Builder (previously known as Adobe Flex Builder)[3] is an integrated development environment (IDE) built on the Eclipse platform that speeds development of rich Internet applications (RIAs) and cross-platform desktop applications, particularly for the Adobe AIR platform. Adobe Flash Builder 4 is available in two editions: Standard and Premium.

Adobe Flash Builder offers built-in code editors for MXML and ActionScript and a WYSIWYG editor for modifying MXML applications. Adobe Flash Builder includes an interactive debugger, allowing developers to step through code execution while inspecting variables and watching expressions. Flex Builder 3 added support for performance analysis. The profiling view displays statistical information about memory use in addition to function call execution time.

Prior to version 4, this product was known as Flex Builder. The name change is meant to signify its connection to other products in the Adobe Flash Platform[4] and to create a clear distinction between the open source free Flex SDK and the IDE.[5]"

Tutorials: https://www.adobe.com/devnet/flash-builder/getting_started.html

Unofficial: <https://www.youtube.com/watch?v=lyV3qO1sh44>

Eclipse = most common JavaIDE

FlashDevelop

<http://www.flashdevelop.org/>

Popular open source Flash development IDE.

By FlashDevelop Team, originally developed by Mika Palmu and Phillipe Elsass

Initially released 2005; latest stable release 5.3.3 on February 2018

“FlashDevelop is an open source story; it was created in 2005 by passionate Flash developers, for Flash developers. It is the product of many contributors which created what is today the best open source Flash development environment.”

Wikipedia:

<https://en.wikipedia.org/wiki/FlashDevelop>

“FlashDevelop is an integrated development environment (IDE) for development of Adobe Flash websites, web applications, desktop applications and video games. The resulting applications run in Adobe Flash Player or Adobe AIR, on Microsoft Windows, Mac OS X, Android or iOS. The primary purpose of FlashDevelop is enabling developers to edit, compile, debug and publish a Flash ActionScript project. It supports ActionScript 2.0, ActionScript 3.0, Haxe and other upcoming languages. It has code completion, syntax highlighting, snippets and other features similar to Microsoft Visual Studio.

FlashDevelop is free and open source software, mostly written in C# and is built on the efficient Scintilla editor component.[2] It is extensible with a plugin architecture and is a .NET Framework 2.0 application only available for Microsoft Windows.[2] As an open source project with a modular plugin system, users are able to improve and optimize the program, as well as write plugins for features that may be missing. The project is primarily funded by donations.[3]

FlashDevelop uses the free Adobe Flex SDK to build ActionScript 3 and MXML applications, the free MTASC compiler to build ActionScript 2 applications, and the free Haxe toolkit to build ActionScript 3, PHP, Neko or JavaScript applications. It also has code completion and highlighting for XML, HTML, PHP, and CSS.[4]”

Github page: <https://github.com/fdorg/flashdevelop>

PowerFlasher FDT

<https://fdt.powerflasher.com/>

By PowerFlasher Solutions

Lastest stable release: Milestone 10, September 2017

“FLEXIBLE DEVELOPMENT TOOLKIT

FDT is an Eclipse based IDE for interactive developers, freelancers and agencies. It's made with passion for expert Flash and Flex coding and innovative mobile development. Create your applications in FDT and efficiently target multiple platforms."

Wikipedia entry:

https://en.wikipedia.org/wiki/Powerflasher_FDT

"Powerflasher FDT is an integrated development environment (IDE) built on the Eclipse platform for development of Adobe Flash-based content.

FDT enables development of content such as video games, rich internet applications and Adobe AIR applications, in the ActionScript 3 and Haxe programming languages.[17] FDT offers project management, code editing and interactive debugging. FDT is similar in purpose and design to Adobe Flash Builder and FlashDevelop. The primary purpose of the IDE is enabling developers to edit, compile, debug and publish a Flash ActionScript project.

FDT uses a subscription-based licensing model and is available in multiple editions,[18][19] including a free version with restricted features for hobbyists,[20] and a low-cost version for students."

Scaleform GfX

https://en.wikipedia.org/wiki/Scaleform_GfX

By Autodesk Game Dev; originally developed by Scaleform Corporation

<https://gamedev.autodesk.com/>

Scaleform provided a development IDE, but was mostly important as middleware for game developers to integrate Flash content into work with other game engines. In limbo as of July 2017.

"As of July 12, 2017, Scaleform, Beast, HumanIK, and Navigation software, and their associated maintenance plans and maintenance renewals, will no longer be available for purchase.

Middleware customers will have access to final versions of the following, based on their current or previous entitlement"

Wikipedia entry:

"Scaleform GfX allows licensees to create user interfaces using Adobe Flash authoring tools, such as Adobe Flash Professional; the resulting SWF files can be used directly by the GfX libraries, providing similar functionality to the Adobe Flash Player but optimized for use within game engines. Scaleform provides APIs for direct communication between Flash content and the game engine, and pre-built integrations for popular engines such as Unity and Unreal Engine. Scaleform GfX can also be licensed for use as a standalone Flash runtime system on mobile platforms,[2][3] competing with Adobe AIR."

49. The Gamebook Engine

<http://www.freegameengines.org/gamebook-engine/>

“The first free, open source, multi-platform framework for reading and writing gamebooks, such as the Choose Your Own Adventure, Lone Wolf, and Fighting Fantasy series.”

‘Game books’, such as Lone Wolf, is a slightly different format of gamified CYOA books (of the type heavily inspired by tabletop and computer-game RPGs) turned digital. Published 2010 and not very maintained but perhaps still used. Other programs, like Hyena, serve as game-book readers without an authoring function.

“The Gamebook Engine is free and open source; it is published under the GNU GPLv2 or later. It is written in C++ and uses Qt 4 and Lua 5.1.

Features:

- * downloadable
- * free, open source, multi-platform
- * uses a simple, easy to understand text format (Hyena Gamebook)
- * scripting with lua
- * displays images
- * audio-enabled (provided in Beta)
- * enables players to save and load games

Planned Features:

- * web-based interpreter, so writers can set up servers, and players can play over the internet
- * multiple GUI interfaces (currently, TGE only supports Qt. I’m considering implementing native win32, maybe others)
- * enable writers to create a map (will use a second file with an .opt.xml extension)

* enable writers to create a status/inventory screen (will use the same second file with an .opt.xml extension)”

50.IDTension

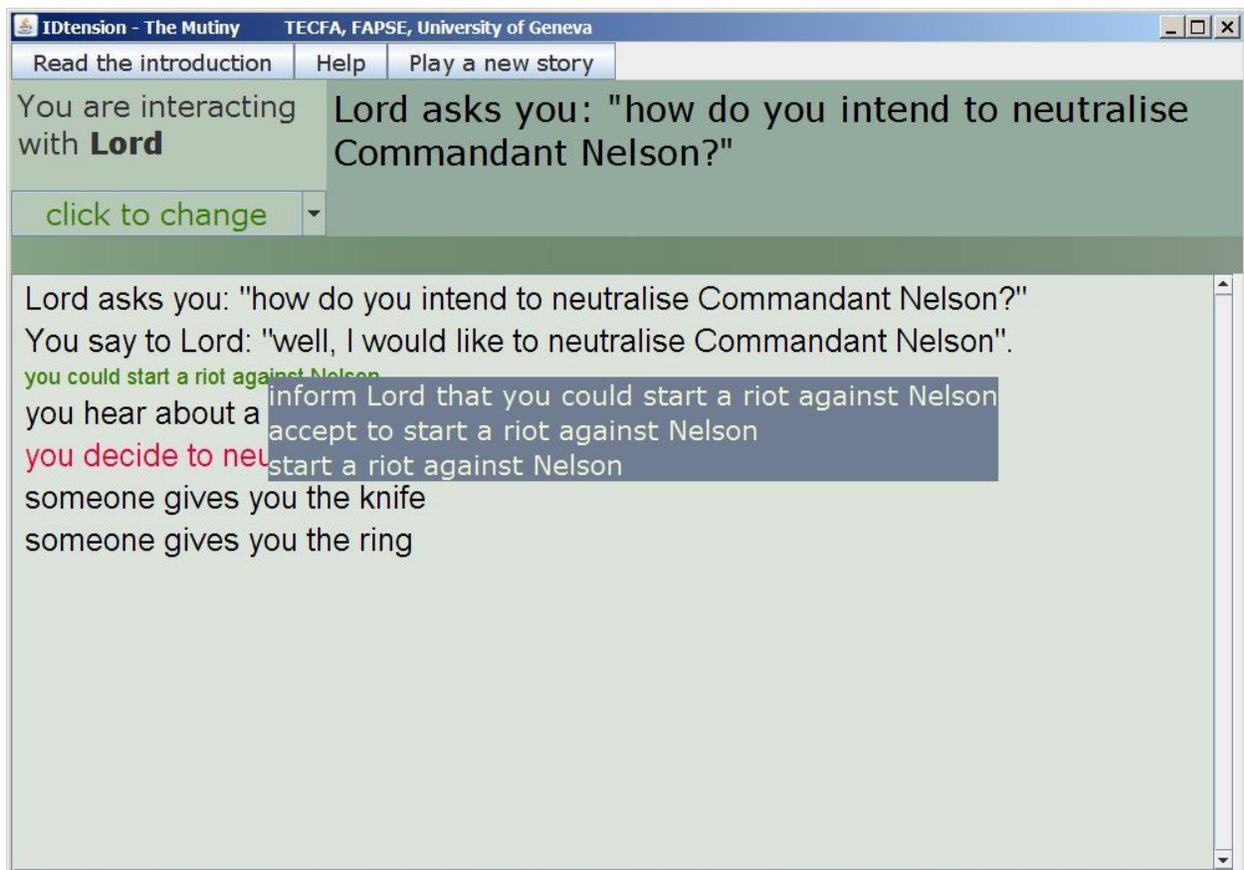
<http://redcap.interactive-storytelling.de/authoring-tools/idtension/>

“IDTension is an Interactive Drama engine and system, designed to provide long term solutions to the problem of combining narrativity and interactivity. More information, including publications, are available at www.idtension.com. A beta version is available, upon request to N. Szilas.

IDTension is based on a narrative-centered goal structure, second order narrative predicates and a model of the user.

Events are display in the "Theatre" either in a text mode or in a 3D engine (customization of Unreal Tournament 2004). In the 3D case,a Behaviour Engine is also used to transform high level actions into a set of sequential or parallel low level animations.

Actions are selected according to an innovative history-based interface.”



Szilas, Nicolas. "IDtension: a narrative engine for Interactive Drama." Proceedings of the Technologies for Interactive Digital Storytelling and Entertainment (TIDSE) Conference. Vol. 3. No. 2. 2003.

Szilas, Nicolas, Olivier Marty, and Jean-Hugues Réty. "Authoring highly generative interactive drama." Virtual Storytelling. Using Virtual Reality Technologies for Storytelling (2003): 37-46.

Szilas, Nicolas. "Structural models for interactive drama." proceedings of the 2nd International Conference on Computational Semiotics for Games and New Media. 2002.

IRIS project (originally) (beta download link provided in the IRIS page):

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/IDtension>

"Availability

Successive versions of IDtension have been demoed in academic conferences since 2001.

A beta version is accessible here (link not yet distributed)

A "released" version should arrive soon.

Technical Description

IDtension is an Interactive Drama engine where the narrative unfolds as the user decides what actions the main character will perform in relation to the other characters in the story.

Fully developed in Java, IDtension's narrative management is characterised by the following distinctive features:

Atemporal structure: A story is not described as pre-authored "chunks" of stories such as scenes but as an atemporal structure of goals, tasks, obstacles and values. This structure resembles a classical goal driven architecture for agents, but it is described in narrative terms (obstacles, ethical values). It is not attached to a character but centralised in a "state of the world"

Second order actions: In order to obtain a large number of possible actions without demultiplying the authoring effort, actions are described according to a second order formalism. For example: $\text{inform}(x,y,\text{goal}(z,g,u))$ means that a character x informs another character y that a third character z has a given goal g , with a fourth character u as a parameter. It could produce the following dialog line: Mary to John: Did you know that Bill wished to be loved by Rachel? In the formula above, "inform", and "goal" are hardcoded, while x , y , z , u and g are variables that can take any authored-defined values. Hardcoded

elements correspond to narratology-inspired fundamental narrative actions and states. This mechanism ensures a large number of produced actions with limited authored material.

Model of the player: The action selection mechanism for Non Playing Characters (NPC) is based on a general model of the player's perception. Indeed, each action is evaluated according to a set of narrative criteria. While some roughly correspond to agent's rationality (ethical consistence, motivational consistence), others are narratively motivated, such as "conflict".

Result Description (end user perspective)

The latest text-based demo consists of a playable interactive drama called *The Mutiny*, written in collaboration with Olivier Marty. The player is one of the characters in the story, a sailor jailed in a 17th century galleon with three other prisoners, after a failed plunder against the ship. His goal is now to take the leadership of the galleon by preparing a small riot (only four prisoners...). This story enables a high degree of interactivity. The user is given many possibilities of actions such as ask/trade/rob/rob armed with a knife an object, ask another character about his/her taste (in order to offer him/her the object he/she likes), try to flatter other characters to have allies, etc. Furthermore, the user is involved in dialogs in which he can refer to the above actions, for example, inform that he can/want to perform these actions or that he/she has failed/succeeded to perform them.

In the 3D version, the player controls the movement of the main character. When moving towards another character, he can interact by pressing the enter key. This triggers a menu with available actions with this character. Dialogues are displayed at the bottom of the screen.

Strong Points

The range of actions is higher than in other Interactive Drama systems. In the middle of *The Mutiny* (see above), more than 100 choices can be found, which are interpreted by the system.

Limitations

The cohesion of the story is not always maintained. For example, some of the user's dialog actions do not get any answers from non player characters.

The authoring of stories is difficult.

Main Publications

Szilas, N. (1999). *Interactive Drama on Computer: Beyond Linear Narrative*. In Proc. AAAI Fall Symposium on Narrative Intelligence (North Falmouth MA). Menlo Park: AAAI Press. [1]

The first paper on IDtension.

Szilas, N. (2003). *IDtension: a narrative engine for Interactive Drama*. In Göbel et al. (eds) Proc. TIDSE'03. Fraunhofer IRB Verlag. [2]

General presentation of IDtension, with two experimental simulations on a simple story: one automatic generation of stories, one interactive simulation.

Szilas, N. (2007). A Computational Model of an Intelligent Narrator for Interactive Narratives. Applied Artificial Intelligence, 21(8), 753-801, Sept. 2007. [3]

The most comprehensive presentation of the computational model.

Supporting Narrative Theories

IDtension is based not on one but several narrative theories.

The narrative logic has been designed according to Greimas' and Todorov's Narrative grammars, as well as Bremond's Roles and processes.

The model of the user is a direct translation of the model of the reader, from Umberto Eco.

Within this model, the notion of conflict is an implementation of the conflict as described in classical dramaturgy (see the three-Act Paradigm and the Five-act model). This model also uses data structures that are inspired by the notion of processes, to manage complexity and relevance criteria.

Computational Model

The narrative logic is based on first order logic. A rule based system that generates possible actions according to the facts stored in the world of the story.

Type of interaction

Text: The user can act on "hot" fragments in the story history pane with a point and click of the mouse to unfold a list of new actions to select from.

3D: navigation with arrows to start interacting with a character and contextual menu for choosing an action."

51. K-Sketch

<http://ksketch.smu.edu.sg/app/index.html>

G-Flash

52. NLBB – Non-linear Book Builder

<https://nlbproject.com/soft.html#close>

“NLBB is an editor, that was specially designed for creating interactive literature with diversified plot. You can use it for creating Visual Novel, Point & Click, Hidden Object genre games, and also famous text stories Choice Of Games.

KEY FEATURES

NLBB editor is visual, it means you can see the scheme of your story in a pictorial way.

NLBB is a cross-platform (Windows, Mac, Linux).

It supports export to different formats (QSP, INSTEAD, URQ, PDF, HTML and others).

NLBB is absolutely free and open-source.

The editor supports scripts for creating more complex stories.

It is possible to set one picture (or a few, the proper one will be chosen according to given condition) and a melody for each location.

Version control support. Possibility to work on the same game together with other authors, or just to make work easier on different computers.

Text in the scheme can be English or Russian (in the future we will add other languages).

A LITTLE BIT MORE ABOUT NLBB

Once we decided to make Interactive Fiction genre games, we studied existing game engines for such games, and realized, that for creating a large game you need to write enormous amount of code, that will finally become confusing, difficult for understanding and navigation. Especially when you create a non-linear game with multiple choices, we decided to create a visual instrument, where you can see a scheme of your story in a simple and visual way, and the program generates the code by itself. The editor also has various instruments to search through the text to find certain phrases and paragraphs. NLBB allows any person to create his own game, even without programming skills.

NLBB means Non-Linear Book Builder, in other words "non-linear books creator". But don't get confused by the simplicity of its name, because NLBB has a wide variety of possibilities. You can create Visual Novels, Point and Click, Hidden Object with it, and also popular text stories Choice Of Games. All our games are made in NLBB. The editor is absolutely free and open-source. I started working on it two years ago, and still improving by adding new functions. The major advantage of NLBB is that it's visual. A paragraph is shown as a rectangle, and a transition between paragraphs is shown as an arrow.

Using NLBB, you can create a short game with a simple mechanics during a single day. But I have to admit, that for creating large projects with complex mechanics, you won't do without programming skills. Now I'd like to make a few examples of sophisticated functions implemented in NLBB:

An opportunity to place a few different portions of text. For example: you have a key location, where a few branches converge. Getting to a key location from different branches, the main character may have

different skills, experience and qualities, because he had to experience different events on every branch. Thus, the key location will chose a proper portion of text depending on the branch the main character came from. This can make your plot richer and more interesting, and game text more varied, that won't overload your scheme.

You can also use a few pictures for one location, that will be shown depending on the set conditions.

You can create scripts, that can be run when visiting locations or following the links.

It's just a small number of what NLBB capable of. It is always under development. It's much easier to create a book in NLBB than on paper, in Word or Excel. (Some people still prefer latter ones, than any existing editor.) You can make a sketch of a future game, than change, develop and improve your creation. Thanks to existing version control, you can be sure of safety of all stages of development. Of course, there are some other editors for creating interactive fiction, but thanks to simplicity and visual methods, NLBB will be helpful for both, beginners and experienced game makers.”

53. Pubcoder 3

<https://www.pubcoder.com>

By Pubcoder (Italian company), first version released 2013, V3 on 2017.. Tool (desktop app) + publishing platform + native mobile app for interactive multimedia content, particularly geared towards mobile. Includes some narrative/interactive multimedia ‘ebook’ features (and multiple publishing\export possibilities). Costs 99\$/year.

“PubCoder fully exploits the power of your computer to crunch data and optimize your assets. Break free from your browser uploads and connectivity bottlenecks.

Interactivity Unleashed

Detect all sorts of clicks and touch gestures and bring your contents to life with animations, videos and sounds.

Adapt your content for any language, alphabet and screen size.

Drag and drop objects and actions to the stage.

Export your project as a native app, a digital book or a web widget.

No coding. Unless you like it

Layout and animate your contents visually. Code does not scare you? Fine-tune with our full-featured code editor.

Use your assets. Or anyone else's

Use your own images, fonts, video and audio files. Missing something? Browse through thousands of Creative Commons assets without leaving PubCoder.”

“Layout your assets on the page using the **Objects panel**.

Image

Display any type of image file: PubCoder supports jpg, png, gif, svg, pdf (as image), tiff and psd. Insert images at high resolution for retina displays and High Density Pixels Android devices.

Text

Layout your text exploiting the power of a WYSIWYG editor. Define your styles in CSS and insert your custom fonts, the editor will automatically detect and display them in the editor.

Multimedia

Insert audio and video files. You can use the default playback control or customize your own, choose your own poster image and play automatically your multimedia file at loading page.

Drawing objects

Display rectangles and ellipses and customize their appearance, such as fill color, border color and border width.”

“Bring your contents to life: detect mobile device gestures and trigger animations.

Events

Interaction is delivered by assigning one or more gestures to any object displayed on your page.

Gesture events are touch, swipe, pinch, shake and accelerometer. To any of these you can then make things happen on the page, by triggering an action or a list of actions. On Desktop devices there is a fallback for each gesture, excluding accelerometer and shake.

Animations

Bring your contents to life by triggering any of the following actions to any of your objects: Play Animation, hide, move, rotate, show, scale, run javascript code, switch image, switch Text. These can also be grouped together or played in a timing sequence.”

54. Scratch 2.0

<https://scratch.mit.edu/>

By MIT media lab, released 2013 (first version launched 2007).

Free visual programming language for stories, games and animations intended for children, with a community of millions of users. Originated as a browser-based simplified language, available as an offline editor as of 2017 and can therefore be considered an authoring tool. Employs a unique strategy of facilitating game and interactive-story design in the form of a sort of puzzle-solving interface, where children have to figure out and piece together the right conditionals, commands, etc. to make the product function as they intend.

“Create stories, games, and animations; Share with others around the world

A creative learning community with **28,657,048 projects shared** (as of 2.6.2018)

With Scratch, you can program your own interactive stories, games, and animations — and share your creations with others in the online community.

Scratch helps young people learn to think creatively, reason systematically, and work collaboratively — essential skills for life in the 21st century.

Scratch is a project of the Lifelong Kindergarten Group at the MIT Media Lab. It is provided free of charge.

Who Uses Scratch?

Scratch is designed especially for ages 8 to 16, but is used by people of all ages. Millions of people are creating Scratch projects in a wide variety of settings, including homes, schools, museums, libraries, and community centers.

Learn to Code, Code to Learn

The ability to code computer programs is an important part of literacy in today’s society. When people learn to code in Scratch, they learn important strategies for solving problems, designing projects, and communicating ideas.

Around the World

Scratch is used in more than 150 different countries and available in more than 40 languages. To change languages, click the menu at the bottom of the page. Or, in the Project Editor, click the globe at the top of the page. To add or improve a translation, see the translation page.

Scratch in Schools

Students are learning with Scratch at all levels (from elementary school to college) and across disciplines (such as math, computer science, language arts, social studies). Educators share stories, exchange resources, ask questions, and find people on the ScratchEd website.

Research

The MIT Scratch Team and collaborators are researching how people use and learn with Scratch (for an introduction, see Scratch: Programming for All). Find out more about Scratch research and statistics about Scratch.”

Vimeo intro video: <https://vimeo.com/65583694>

Wikipedia entry: [https://en.wikipedia.org/wiki/Scratch_\(programming_language\)](https://en.wikipedia.org/wiki/Scratch_(programming_language))

55. Story Canvas

<http://www.skorupski.org/wiki/academia/storycanvas>

By James Skorupski.

“Story Canvas, a comic/storyboard-based interactive, generative story authoring interface based on the same underlying story model of Wide Ruled. This research focuses on developing and evaluating completely visual authoring techniques and smart interface features for the underlying plan-based story generator. It builds off of the lessons learned from Wide Ruled, and sets the stage for a more complex story model in future work. As part of my work, I also explored the future of Story Canvas research, with a collection of concepts, illustrations, and process descriptions that overview the potential evolution of this plan-driven story authoring architecture.”

http://iris.ofai.at:7777/iris_db/index.php/publications/show/366

Skorupski, James, and Michael Mateas. "Novice-Friendly Authoring of Plan-Based Interactive Storyboards." AIIDE. 2010.

Abstract: “Story Canvas is a visual authoring tool for the creation of interactive, generative stories. Aimed at authors without a technical background in computational storytelling, our system takes an existing author goal-based narrative planning architecture and adds a highly visual authoring and reading interface to the technology, using the language of storyboards and comics as a framework for both authoring and interacting with the resulting narratives. In this paper we describe Story Canvas and its evolution from our previous authoring work, including how our interface choices have been driven by our previous experiences with non-technical authors, and describe the details of translating the visual authoring constructs into story plans within the story generator.”

56. StoryStylus

<https://storystylus.com/>

SOFTWARE DESIGNED FOR STORYTELLERS TO CREATE, PUBLISH & PLAY INTERACTIVE STORY GAMES FOR WEB, MOBILE OR FACEBOOK.

CREATE

Linear, branching or sandbox narrative-driven worlds.

CRAFT

Living, breathing interactive worlds where story matters.

COLLABORATE

Among fellow storytellers, artists, musicians, and with your audience!

STORYSTYLUS – THE SOFTWARE

StoryStylus is WordPress for publishing narrative-focused games. Story elements like People, Locations, Events, Items and Conversation are broken down into building blocks waiting for you to create your open worlds for exploration.

VISUAL STORYTELLING

Engage your audience in your visual world. Create your own theme templates to craft the look and feel of your steampunk, mystery, sci-fi, fantasy or horror story games and so much more.

INTERACTION & DIALOG

Create intricate conversation between players and NPCs (non-player characters), unlock information and navigate relationship rapport

EXPLORATION

Design the world your players will explore with your own maps, photos, or 2D/3D illustrations.

MARKETPLACE

The BEST stories will be curated and published on One More Story Games' website, Facebook app and mobile apps. These are reviewed, tested and approved by OMSG. Authors receive royalties of up to 50%.

COMING SOON!

Here are some of the coming soon features we are hard at work for our StoryStylus creators:

Serialize your story worlds. Build your story world once, create sequels and carry player choices over to subsequent story games.

Translate for a global audience. Translation tools built in make it easy for you to work with translators or write your story in multiple languages.

Author dashboard with analytics

Multi-player

Combat & chases

Geocaching for live gameplay elements”

Intro youtube video: <https://www.youtube.com/watch?v=8ZPzca0EOBI>

57. Tracery

<http://tracery.io/>

Tracery is a super-simple tool and language to generate text, by GalaxyKate. It's been used by middle school students, humanities professors, indie game developers, professional bot makers, and lots of regular people, too. Give it a try today!

By Kate Compton. Presented at ICIDS 2015, seems to have some momentum. Very interesting.

Compton, Kate, Ben Kybartas, and Michael Mateas. "Tracery: an author-focused generative text tool." *International Conference on Interactive Digital Storytelling*. Springer, Cham, 2015.

Users have made twitterbots, artbots, games, and stories with Tracery. Here are a few of my favorites. If you've made something cool with Tracery, let me know so I can share it, too!

Tracery is being developed in Javascript, but it's ported to more languages by other users. Looking to port Tracery? I'm working on a more rigorous specification, so contact me (galaxykate at gmail)

Abstract: New communities of generative text practitioners are flourishing in novel expressive mediums like Twitterbots and Twine as well as the existing practices of Interactive Fiction. However, there are not yet **reusable and extensible generative text tools that work for the needs of these communities**.

Tracery is an author-focused generative text tool intended to be used by novice and expert authors, and designed to support generative text creation in these growing communities, and future ones. We identify the design considerations necessary to serve these new generative text authors, like data portability, modular design, and additive authoring, and illustrate how these considerations informed the design of the Tracery language. We also present illustrative case studies of existing projects that use Tracery as part of the art creation process.

Ported into Ruby, Python, Twine, Node

<http://www.galaxykate.com/>

<https://cheapbotsdonequick.com/>

Site specializing in twitter-bot production through Tracery.

58. TWorld\Seltani

<https://github.com/erkyrath/tworld>

By Andrew Plotkin, released 2013-2014.

Tworld -- a choice-based shared online text environment sandbox

Tworld pre-release version 0.10.

Designed by Andrew Plotkin <erkyrath@eblong.com>.

Tworld is a text MUD engine in a new style. It runs as a web application, offering hypertext environments (hyperlink-based actions rather than a command line). Players can construct new areas in a wiki-style interface. The intent is to have a modern, easily-accessible shared world, which blends the lightweight social environment of a chat MUD with the inviting collaborative sandbox of a wiki.

Seltani

<http://seltani.net/about>

Multi-player\autho writing\playing based on the Myst world (and possibly the community that ditched the failed attempt at an MMORG, discussed in Hartmut's IDN collection). Employs Tworld, but is by far the biggest and most discussed 'world' made with it (most mentions are simply of Seltani).

"Seltani is an online, shared, text-based, open-source fan project based on the Myst series of games. In this environment, players can create and share explorable worlds.

IndieCade 2015 finalist

Tworld, the server engine behind Seltani, is a generic engine for a shared text environments. (Seltani is a Tworld server which has been customized with Myst-specific content.) Tworld is written in Python and based on open-source technologies such as Tornado and MongoDB. It is available under the MIT open-source license.

Seltani is not associated with or supervised by Cyan Worlds."

59. Wide Ruled 2.0

http://www.skorupski.org/wiki/wide_ruled/wide_ruled_v2

By James Skorupski. **Interesting tool. Alex Mitchell was involved in the development. Alive-ish**

“Wide Ruled, an interactive story authoring and generation application based on the Universe story generation model. This project focuses on providing a simple and usable interface to the complex and powerful underlying generation model, that can be utilized by authors with little or no computer programming experience.”

Wide Ruled is an authoring tool that allows a user to **design automatically generated interactive textual stories, using an underlying author goal-based planning system. It is based on the UNIVERSE model of story generation, modified to include additional object types, episodic memory, and asynchronous author-guided interactivity. It is an experimental research and teaching tool developed by James Skorupski at the Expressive Intelligence Studio in the School of Engineering at the University of California, Santa Cruz.**

Dead tools

ADAPT 3D + ABAS

Very promising description for a tangible interface for IDN authoring. However, the link is dead, the Unity asset they're describing is not showing up on the search, tool seems dead.

Academic project, developed by University of Pennsylvania's Center for Human Modeling and Simulation (which itself seems defunct since 2015, but also seems to have done some interesting work)

https://repository.upenn.edu/hms/?utm_source=repository.upenn.edu%2Fhms%2F151&utm_medium=PDF&utm_campaign=PDFCoverPages

ADAPT was developed by Alexander Shoulson, Nathan Marshak, Mubbasir Kapadia & Norman I. Badler, University of Pennsylvania

Shoulson, Alexander, et al. "Adapt: the agent development and prototyping testbed." IEEE Transactions on Visualization and Computer Graphics 20.7 (2014): 1035-1047.

Abstract: “We present ADAPT, a flexible platform for designing and authoring functional, purposeful human characters in a rich virtual environment. Our framework incorporates character animation, navigation, and behavior with modular interchangeable components to produce narrative scenes. Our animation system provides locomotion, reaching, gaze tracking, gesturing, sitting, and reactions to external physical forces, and can easily be extended with more functionality due to a decoupled, modular structure. Additionally, our navigation component allows characters to maneuver through a

complex environment with predictive steering for dynamic obstacle avoidance. Finally, our behavior framework allows a user to fully leverage a character's animation and navigation capabilities when authoring both individual decision-making and complex interactions between actors using a centralized, event-driven model."

ABAS is an AI framework for multi-character interactions, integrated into ADAPT's Unity build. Presented at ICIDS 2015.

Geraci, Fernando, and Mubbasir Kapadia. "Authoring Background Character Responses to Foreground Characters." International Conference on Interactive Digital Storytelling. Springer, Cham, 2015.

Abstract: "This paper presents a flexible and intuitive authoring interface for specifying the behaviors of background characters and their reactions to user-controlled foreground characters. We use an event-centric behavior authoring paradigm and provide metaphors for altering the behavioral responses using conditions, modifiers, and contexts. The execution of an event (an interaction between multiple characters in the scene) is governed using authored conditions on the state of the participating characters, as well as the history of their past interactions. Our system monitors the ongoing simulation and the actions of foreground characters to trigger plausible reactions in the background characters as events, which satisfy user-authored conditions. Modifiers allow authors to vary how events are perceived by specific characters, to elicit unique responses. Contexts provide a simple mechanism to add behavior modifiers based on the current location of the characters. We demonstrate the benefits of our approach by authoring a virtual populace, and show the design of simple background activity, to more complex multi-agent interactions, that highlight the ease and flexibility of specification."

Excerpt: "we present ABAS, a tool which enables an author to easily design and modify character behaviors, and how these synthesize with their environment and other agents. ABAS provides a flexible event-centric model, which can simply be configured and tested anew, after modification in the next run, without the need of new builds or code modifications. An event is the cornerstone of the presented authoring model, which can be easily molded by utilizing conditions, modifiers, and contexts. Using our intuitive and flexible specification interface, end users can quickly specify and generate unique, heterogeneous background character behaviors in response to foreground (player-controlled) characters. These behaviors depend on user-authored conditions and modifiers, the spatial context in which the actions take place, and even the history of interactions between characters." (p. 131)

"Authoring environment for structuring non-linear narrative"

Schneider, Oliver, Braun & Habinger (2003) report on having created an all-purpose tool, which they never quite bothered to name. Tested out with the "mobile computer game\augmented reality

environment” (that basically functions as a proto-app), Geist. Based on the work model of creating normal literary works.

“There are several ways for the author to look onto or into the story and to organize it. These ways are *inquiry material, ideas and notices, visualizations, and test.*”

Schneider, Oliver, Norbert Braun, and Gregor Habinger. "Storylining suspense: An authoring environment for structuring non-linear interactive narratives." (2003).

Bowman-Zócalo\DEF (Domain Elaboration Framework)

By J.M Thomas & R.M Young

To implement their theories on mixed-initiative authoring, Young & Thomas created is a mixed initiative program that utilizes their meatatheory, DEF (2), which implements insight from their Mimesis system (see ‘academic procedural generation tools’ below). Following this, Thomas created “a general plan-authoring interface” (3) that implements DEF, built upon the existing architecture of the Bowman GUI, a planner tool created as part of the Zocalo suite of planning tools (by now itself long dead). Thomas’ mixed-initiative authoring tool is meant to interpret the authors’ preferences and assist in their realization (1). Though the tool cannot be accessed, it appears to have been a fairly developed work in the field of mixed-initiative authoring, particularly for its time.

Abstract (1): “This paper describes a foundation for an interface to allow non-technical human authors to collaborate with an automated planning system to design interactive narrative. Drawing from research in advisable and mixed-initiative planning, a domain metatheory is presented that can encode the narrative goals and preferences of the human author of planned interactive narrative. The authors describe a graphical user interface that exploits this metatheory to elicit authorial preferences. “

Abstract(3): “My research provides an interface for non-technical authors to collaborate with a planning system to create interactive narrative. I describe a domain metatheory to allow for qualitative elaborations of narrative domains. A graphical user interface that exploits this metatheory is used to specify authorial preferences. These preferences are employed to enhance the qualitative reasoning of the planning system.”

Zocalo web services masters thesis by Thomas Michael Verniery, North Carolina State University:

1. Thomas, J.M., Young, R.M.: Elicitation and Application of Narrative Constraints Through Mixed-Initiative Planning. In: Proceedings of the ICAPS 2006, Cumbria, UK (2006).

<https://goo.gl/5oSrn3>

2. Thomas, James M., and R. Michael Young. "Author in the loop: Using mixed-initiative planning to improve interactive narrative." ICAPS 2006 (2006): 21.
3. Thomas, James M. "Collaborative Authoring of Plan-Based Interactive Narrative." ICAPS 2006 (2006): 127.
4. Vernieri, Thomas Michael. "A web services approach to generating and using plans in configurable execution environments." (2006).

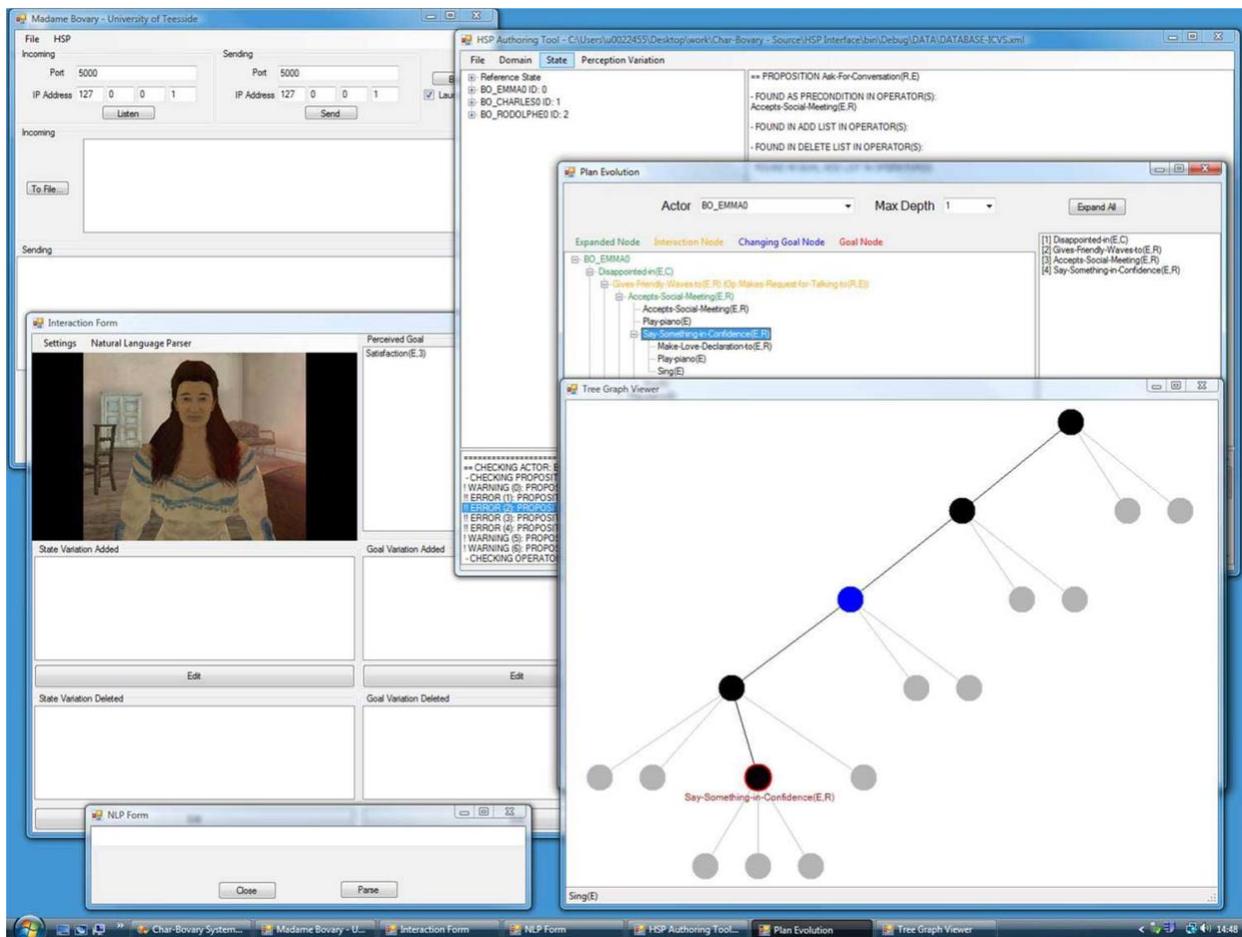
<https://goo.gl/jzw39Q>

EMOEMMA

<http://redcap.interactive-storytelling.de/authoring-tools/emo-emma/>

“Combined with ontology of characters’ feelings, our latest work on character-based affective Interactive Storytelling aims at reconciling both generation and visualisation philosophies and uses a real-time Heuristic Search Planner (HSP) [Bonet and Geffner, 1999] to generate characters’ actions consistent with their psychology and allowing anytime user interactions [ACII2007] [AAMAS2009].

[Bonet, B., and Geffner, H.: Planning as heuristic search: new results. In: Proceedings of the European Conference on Planning (ECP’99), pp. 360--372 (1999)]



Our authoring environment (as shown above) has been developed subsequently to our proof-of-concept prototypes of emotional planning for IS. Its rationale was to support the authoring of a complex planning domain, by checking its completeness and its consistency. However, since this authoring tool was an interface to the narrative formalism itself [TIDSE06], and that the narrative formalism determined entirely the interactive narrative, it became a candidate for a more generic approach to authoring and authoring methods [ICIDS08]. The integration of new modules could support the collaboration between authors and developers in designing an interactive narrative.

The authoring tool is available for download here and its user documentation is downloadable from here. Note that it requires the Microsoft .NET Framework Version 2.0 Redistributable Package to work, which you can download from here.”

Charles, Fred, et al. "Emoemma: Emotional speech input for interactive storytelling." Proceedings of The 8th International Conference on Autonomous Agents and Multiagent Systems-Volume 2. International Foundation for Autonomous Agents and Multiagent Systems, 2009.

ENIGMA

<http://redcap.interactive-storytelling.de/authoring-tools/enigma/>

“Enigma is an experimental platform for collaborative authoring of the behaviour of autonomous virtual characters in interactive storytelling applications. It originated from our experience in creating character driven interactive storytelling applications like FearNot! [1] in the EU FP6 project ECircus without any supporting authoring technology. The main idea is to overcome the bottleneck of knowledge acquisition that exists in generative interactive storytelling systems through a combination of crowd-sourcing and machine learning.

A client application which can be run directly from the browser allows contributors, who are invited by a principal author (PA) to create/tell a little story within a predefined story universe, e.g. the Little Red Riding Hood Universe. Every story that gets created within this client application will be submitted to a server where many of these stories are collected and processed by machine learning algorithms to infer generative character models that can be used to drive a virtual actor within an interactive drama. These virtual characters can also run in the background while a story is created in the client. This allows the characters to make suggestions at certain points in the story (more about this in [2] and [3]).

User-friendliness of the authoring client is deemed very important if many contributors are expected to be mobilised. Although the end goal is the creation of a database of symbolic story knowledge, we assume that providing this knowledge ex- and implicitly in the process of telling stories will be easier for invited contributors than editing it directly. We however still have to verify this hypothesis through a series of experiments.

For the same reason (user friendliness and appeal) we have decided against a purely text based tool. Instead we opted for visualisation through a comics generation system [4]. Originally we planned to use a 3D graphics authoring interface, but later found that the comics system is a better choice. Using it allows us to have a thin authoring client (The comics are generated on the server side, a URL to the generated picture is returned) that can be easily distributed. Also, we need to represent event sequences within the authoring tool. With the way they are structured (1 panel = 1 event), comics provide a good mechanism for doing that. Finally this form of visualisation allows for uncomplicated graphics content generation independent of any specific tools (characters are represented by a series of annotated head and body pictures, scenes are simply panoramic pictures).”

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1260

Kriegel, Michael, and Ruth Aylett. "Crowd-sourced AI authoring with ENIGMA." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2010.

“ENIGMA is an experimental platform for collaborative authoring of the behaviour of autonomous virtual characters in interactive narrative applications. The main objective of this system is to overcome

the bottleneck of knowledge acquisition that exists in generative storytelling systems through a combination of crowd-sourcing and machine learning. While the authoring front-end of the application is used to create short example stories set in a specific story domain, the server side of the application collects many of those stories and derives behaviour models for autonomous virtual characters such as formal planning operator descriptions from them. A mixed initiative mode increases coherence by feeding already learnt character behaviour back into the client.”

FearNot! (FAtiMA)

“An Authoring Tool for an Emergent Narrative Storytelling System”

<https://www.aaai.org/Papers/Symposia/Fall/2007/FS-07-05/FS07-05-011.pdf>

Michael Kriegel, Ruth Aylett - Heriot-Watt University, Edinburgh

Joao Dias, Ana Paiva – Porto salvo, Portugal

Presented at the 4th ICIDS, 2011

Kriegel, Michael, et al. "An authoring tool for an emergent narrative storytelling system." AAAI Fall, Symposium on Intelligent Narrative Technologies. 2007.

http://iris.ofai.at:7777/iris_db/index.php/publications/show/819

Dead, was at the very least alive between 2007-2014. Seems interesting.

In this paper we present the initial conceptual design of **an authoring tool for the emergent narrative agent architecture FATiMA that powers the virtual bullying drama FearNot!**. We explain that the process of authoring emergent narrative to a large part consists of **designing a planning domain for a virtual character planner and explain the difficulties this task poses to the non-technical author**. After reviewing existing authoring tools and evaluating them in terms of their applicability to FATiMA, **we introduce a novel concept of approaching the authoring task, in which the author is playing through example story lines that are used to gradually increase the knowledge and intelligence of a virtual character. This concept is extended by a mixed initiative feature, which allows the author to cooperate with the character planners while providing the example stories**. Finally we concretize our idea and explain our intended implementation of it within the FearNot! Framework. We believe that our design, although being specified with a particular architecture (FAtiMA) in mind, may provide some interesting ideas to others, who are trying to solve the authoring problem for interactive storytelling systems.

<https://dl.acm.org/citation.cfm?id=1551788.1551854>

Another paper by Aylett on an anti-bullying intervention (seems “FearNot!” was originally created for this)

IRIS project

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Fearnot>

"FearNot! Project is based on unscripted 3D animated characters (Aylett et al., 2006). Characters use a cognitive and emotional model of human behaviour. It is expected that from the interaction of these complex characters a global story will emerge, without any central management of the story, according to the principle of narrative emergence (Aylett, 1999).

System components facilitate story development by setting up episodes and scenes for the purpose of increasing the chances of story progression.

Recent research includes a double appraisal mechanism, where an agent chooses an action according to the estimated impact on the other agent. The action with the strongest impact is selected (Louchart & Aylett 2007)."

60. Aylett, R. (1999). Narrative in virtual environments - towards emergent narrative. In Proc. AAAI Fall Symposium on Narrative Intelligence (North Falmouth MA), 83-86. Menlo Park: AAAI Press.
61. Aylett, R., Louchart, S., Dias, J., Paiva, A., Vala, M., Woods, S. & Hall, L. (2006). [Unscripted Narrative for affectively driven characters](#). IEEE Journal of Graphics and Animation. May/June 2006 (Vol. 26, No. 3) ISSN: 0272-1716 pp. 42-52.
62. Louchart, S. and Aylett, R. (2006). Investigation Théorique sur le récit émergent. In (Szilas & Réty, Eds.) Création de récits pour les fictions interactives - simulation et réalisation. Paris: Hermes/Lavoisier. pp. 241-271.
63. Louchart, S., Aylett, R. (2007) . From synthetic characters to virtual actors. In Proceedings 3rd Artificial Intelligence and Interactive Digital Entertainment International Conference (AIIDE 2007) (pp. 88-91). Stanford, USA: AAAI Press.

FAtiMA page in the RIDERS website: <http://www.riders-project.net/research/systems-tools/fatima.html>

PRISM

Cheong, Yun-Gyung, et al. "Prism: A framework for authoring interactive narratives." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2008.

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1163

Abstract: "The advances in computing technologies enable the computer users to create and share their own stories to the community at large. However, it is still regarded as complicated and laborious to author interactive narratives, where a story adapts as the user interacts with it. In authoring interactive narratives, two main approaches-branching graphs and AI planning-have been significantly used to augment interactivity into conventional linear narratives. Although each approach offers its own possibilities and limitations, few efforts have been made to blend these approaches. This paper describes a framework for authoring interactive narratives that

employs an adapted branching narrative structure that also uses planning formalism to enable automated association between nodes. We expect that our work is valuable for non-expert users as well as AI researchers in interactive storytelling who need to create a large quantity of story contents for varied endings for a story.”

Scenejo (Ulriek Spierling)

<http://scenejo.interactive-storytelling.de/>

<http://scenejo.interactive-storytelling.de/SAT.html>

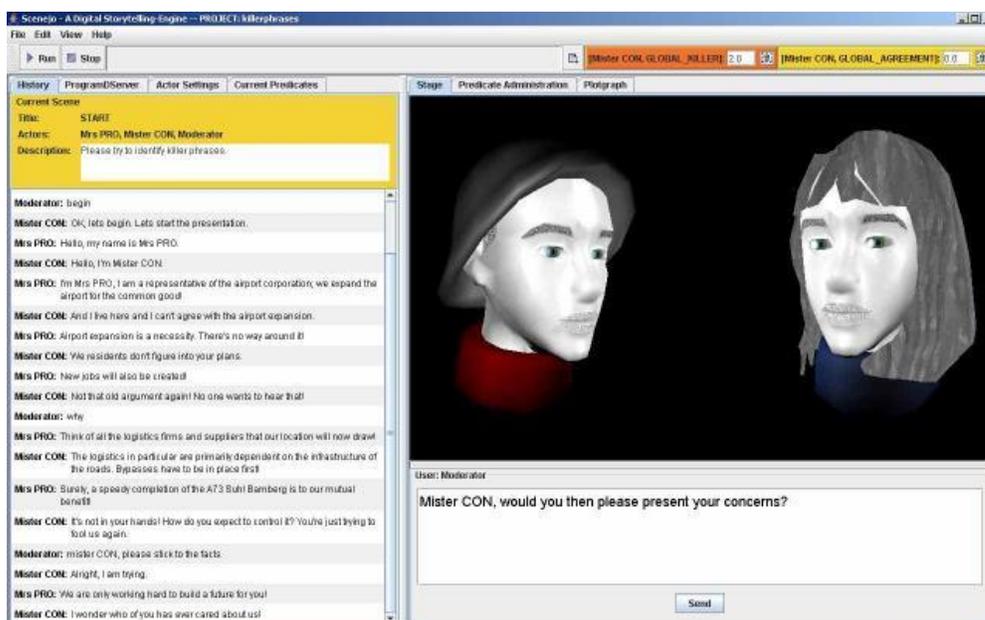
<http://redcap.interactive-storytelling.de/authoring-tools/scenejo/>

Seems dead since 2011, and not very interesting.

“ The Scenejo Authoring Tool (SAT) is a stand-alone tool for the authoring of dialogue-based interactive storyworlds running with the Scenejo engine.

SAT supports the creation of interactive content based on language interaction (currently we support English and German). The result is a multi-agent text conversation of several chatbots and users. It can be played with Scenejo, a conversational digital storytelling platform. The resulting conversational games can be used for entertainment and for training.

The software and tutorials are made available for educational purposes. However, as the Scenejo and SAT web pages are currently in the process of being rebuilt, please check back later to access again the tools and tutorials”. ---So currently inaccessible



IRIS project

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Scenejo>

“The goal of the 'Scenejo' project is to provide an experimental platform for 'Interactive Digital Storytelling', which can be used to experience emerging dialogues or conversations between a number of virtual and human actors. Scenejo connects several [A.L.I.C.E.](#) chatbots in a conversational loop of turn taking, which is controlled by a software component called 'drama manager'. By text-chat via a standard keyboard, users can join in the conversation at any time.”

https://www.researchgate.net/publication/282979274_Scenejo_-_An_Interactive_Storytelling_Platform

Paper on the engine by Ulrike Spierling, Wolfgang Muller, and two students

Scenejo is an Interactive Storytelling platform, supporting both structured story lines and emergent behavior. Authoring is performed either at the level of a story graph or dialogue patterns. The Scenejo platform supports several artificial actors conversing with a number of real actors, representing the users in the system. Artificial actors are visualized as animated 3d characters, and actor responses are presented by speech synthesis in combination with non-verbal behavior.

Second paper: Towards Accessible Authoring Tools for Interactive Storytelling, by Ulrike Spierling Sebastian A. Weiß Wolfgang Müller

TIDSE 2006: Technologies for Interactive Digital Storytelling and Entertainment pp 169-180

“This contribution presents and discusses Scenejo as an experimental platform for Interactive Digital Storytelling, focusing on the authoring process as initial viewpoint for its development. Special emphasis is on the construction of conversational threads for virtual actors using pattern matching, employing transition graph representations as the main interface for authoring. In the conclusion, the opportunities and challenges of graph structures are discussed.”

https://link.springer.com/chapter/10.1007/11944577_17

Spierling, U. (2007). Adding Aspects of “Implicit Creation” to the Authoring Process in Interactive Storytelling. In: Cavazza, M., Donikian, S. (eds.): Virtual Storytelling, ICVS 2007, Conference Proceedings, Saint Malo, France; Springer Verlag LNCS. [\[2\]](#)

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1771

SceneMaker\Visual Scenemaker

<http://scenemaker.dfki.de/>

interactive 'performance' tool by Patrick Gebhad, Michael Kipp, Martin Klesen & Thomas Rist

Initially presented in 2000

<https://pdfs.semanticscholar.org/3a11/4e074bf95cd6d8a5c796fdf75afa4045e43d.pdf>

“In this paper, we introduce a toolkit called SceneMaker for authoring scenes for adaptive, interactive performances. These performances are based on automatically generated and prescribed scenes which can be authored with the SceneMaker in a two-step approach: In step one, the scene flow is defined using cascaded finite state machines. In a second step, the content of each scene must be provided. This can be done either manually by using a simple scripting language, or by integrating scenes which are automatically generated at runtime based on a domain and dialogue model. Both scene types can be interweaved in our planbased, distributed platform. The system provides a context memory with access functions that can be used by the author to make scenes user-adaptive.”

Refurbished in 2012 as a visual character authoring tool

Gebhard, Patrick, Gregor Mehlmann, and Michael Kipp. "Visual SceneMaker—a tool for authoring interactive virtual characters." *Journal on Multimodal User Interfaces* 6.1 (2012): 3-11. <https://link.springer.com/content/pdf/10.1007%2Fs12193-011-0077-1.pdf>

“**Creating interactive applications with multiple virtual characters** comes along with many challenges that are related to different areas of expertise. The definition of **context-sensitive interactive behavior** requires expert programmers and often results in hard-to-maintain code. To tackle these challenges, **we suggest a visual authoring approach for virtual character applications and present a revised version of our SceneMaker tool**. In SceneMaker a **separation of content and logic** is enforced. In the revised version, the Visual SceneMaker, we introduce concurrency and specific history structures as key concepts to facilitate **(1) clearly structured interactive behavior definition**, **(2) multiple character modeling**, and **(3) extensions to existing applications**. **The new integrated developer environment allows sceneflow visualization and runtime modifications to support the development of interactive character applications in a rapid prototyping style**. Finally, **we present the result of a user study**, which evaluates usability and the key concepts of the authoring tool.”

Slightly re-packaged again in the current website:

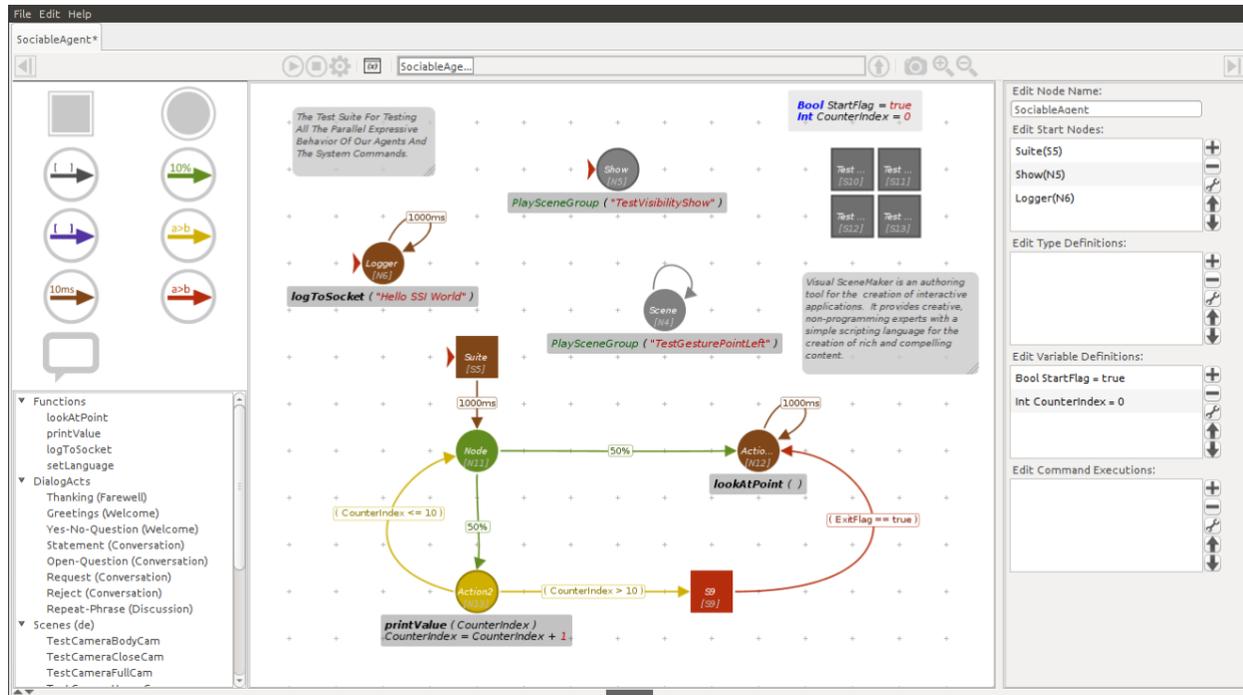
“Visual SceneMaker is an authoring tool for **creating interactive presentations aimed to non-programming experts**. **It supports the modeling of verbal and non-verbal behavior of Virtual Characters and robots**. **Therefore, it provides users with a graphical interface and a simple scripting language** that allows them to create rich and compelling content.

SceneMaker’s central authoring paradigm is the separation of content (e.g. What a character should say and how) and logic (e.g. reaction to user input and/or internal processes). **The content is organized as a collection of Scenes which are specified in a multi-modal scenescript resembling a movie script with dialogue utterances and stage directions for controlling gestures, postures, and facial expressions**. **The logic of an interactive performance and the**

interaction with virtual characters is controlled by a SceneFlow, which is a nested graph similar to Harel's statecharts.

The implementation of Visual SceneMaker relies on an interpreter approach, allowing real-time visualization of running SceneFlows and Scenes.

Visual SceneMaker has successfully been used in several applications and in field tests with school students and college students proving that it can be a useful educational tool.”



SOAP

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/SOAP>

IRIS project, apparently led by Birgit Endrass.

Basically a system built to automatically integrate 3 existing tools: Scenmaker(see above) + a Parser command-line generation tool (usually not connected to narrative) named SPIN, for dialogue-based interaction, and an engine named Visual Beergarden for visualization. So in terms of authoring environment its a parser + visualization plugin for Scenemaker, essentially.

“Computational Model

The tool was designed without any background of narrative theories but uses SceneFlows as the main mean for dialogue and interaction modeling.

IRIS page on the SceneFlow logic (which seems to have featured in quite a dew of their projects):

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/SceneFlows>

Output modalities: text-to-speech & nonverbal behavior of virtual characters”

Main Publications

Endrass, B., Klimmt, C. Mehlmann, G., André, E. and Roth, C. (2011) Exploration of User Reactions to Different Dialog-based Interaction Style, Proceedings of the 4th International Conference on Interactive Digital Storytelling (ICIDS 2011)

Mehlmann, G.; Endrass, B., André, E. (2011) Modeling and Interpretation of Multithreaded and Multimodal Dialogue, Proceedings of the 13th International Conference on Multimodal Interaction (ICMI 2011).

StoryTec

<http://www.storytec.de/index.php?id=2&L=1>

“Authoring Environment for the creation of interactive multimedia applications”

By the Technical University of Darmstadt & KOM Multimedia Communications Lab

Perhaps not fully dead, but no news since circa 2012

“StoryTec has been conceptualized as rapid prototyping environment to facilitate the authoring process of interactive applications.

Examples include, but are not limited to Story-based city and museum guides, classical Web-based training courses, game-based learning appliances for kids, students and families as well as process-oriented, individual and collaborative simulation and training environments for trainees and employees or personalized exergames to increase the motivation for a sportive and healthy life.

Nowadays, within the information society and the age of digital natives and digital immigrants, interactive media become highly relevant. Stories and game-based approaches are broadly used, not only for knowledge transfer, but also in the context of marketing/advertisement, in the healthcare sector or other business domains.

StoryTec offers any kind of authors – might it be a lecturer, teacher, trainer or coach, a doctor or therapist or interested private people – the possibility to document personal experiences and common knowledge and to create interactive media appliances out of it. Examples include interactive holiday stories, digital educational games or health games.”



Two Academic papers:

Mehm, Florian, Stefan Göbel, and Ralf Steinmetz. "Authoring of serious adventure games in storytec." *E-Learning and Games for Training, Education, Health and Sports* (2012): 144-154.

<https://goo.gl/MGKS5q>

Göbel, Stefan, Luca Salvatore, and Robert Konrad. "StoryTec: A digital storytelling platform for the authoring and experiencing of interactive and non-linear stories." *Automated solutions for Cross Media Content and Multi-channel Distribution, 2008. AXMEDIS'08. International Conference on. Ieee, 2008.*

<https://goo.gl/U2J3T7>

Wayang Authoring

<https://wayangauthoring.wordpress.com/>

“Wayang Authoring is a media to enhance children’s creative imagination and self expression by composing and sharing visual stories. This media is developed based on Indonesian traditional art form Wayang Kancil.

This project was initiated by Wahyu Agung Widjajanto. He is a member of dimeb (Digital Media in Education) research group, Faculty of Mathematics/Computer Science, University of Bremen, Bremen, Germany.”

Widjajanto, Wahyu Agung, Michael Lund, and Heidi Schelhowe. "Wayang Authoring: a web-based authoring tool for visual storytelling for children." Proceedings of the 6th International Conference on Advances in Mobile Computing and Multimedia. ACM, 2008.

Widjajanto, Wahyu Agung, Michael Lund, and Heidi Schelhowe. "Enhancing the ability of creative expression and intercultural understanding through visual story." International Conference on Web-Based Learning. Springer, Berlin, Heidelberg, 2009.

Psomos & Kordaki:

“Wayang Authoring (Widjajanto, 2008) is a web-based EDSE in which children from culturally diverse storytelling styles can create digital stories by using digital puppets. The idea of Wayang Authoring is based on Wayang which is an Indonesian ancient form of storytelling. Wayang Authoring is composed of three elements: i) the imagination step that gives an inspiration to children through tutorials or pre-built stories, ii) the creative step in which children create and save their stories, and iii) the social step in which they can share, comment or even rank other children stories. The age group that Wayang Authoring is supposed to attract is 6-11 year old children”.

Psomos, Panagiotis, and Maria Kordaki. "Pedagogical analysis of educational digital storytelling environments of the last five years." Procedia-Social and Behavioral Sciences 46 (2012): 1213-1218.

Youtube video:

https://www.youtube.com/watch?time_continue=117&v=5gvD8VFctRk

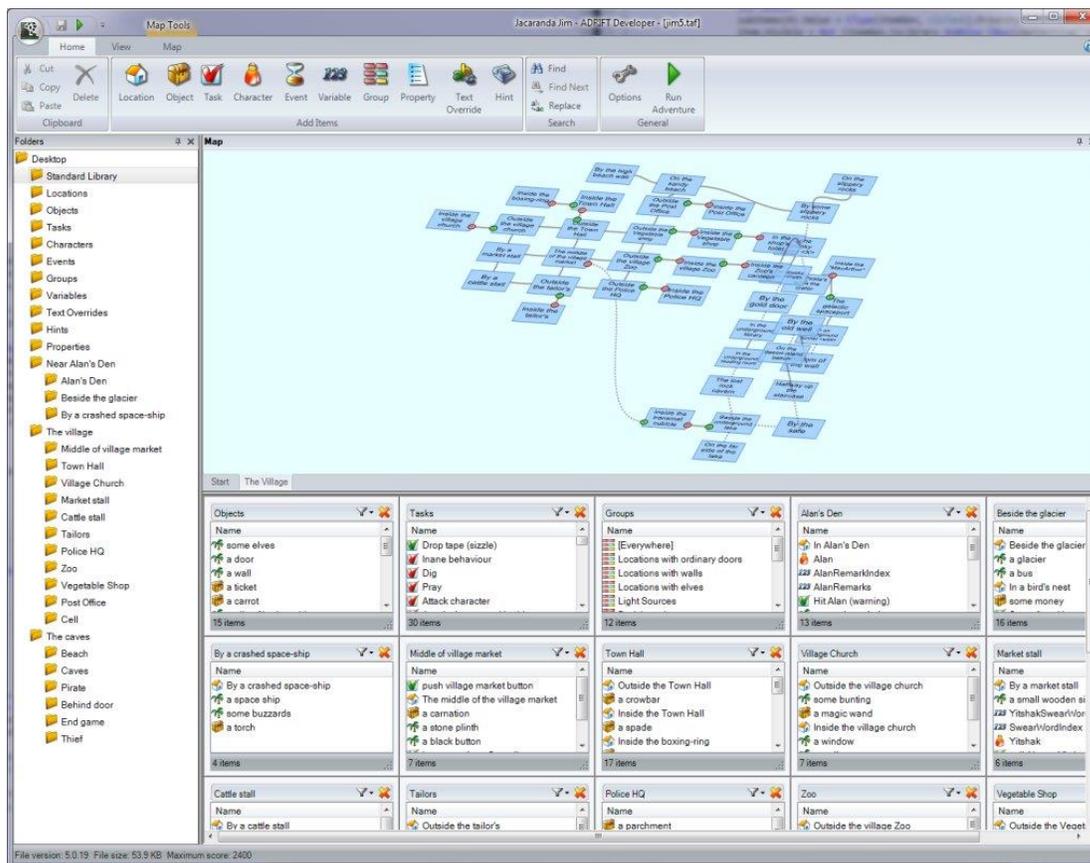
A. III. Interactive Fiction tools

Hypertext

60.Adrift

<http://www.adrift.co/>

Alive-ish. Has an interesting visualization interface.



There are several different systems for creating interactive fiction. All have their advantages and disadvantages. However, all of the alternatives require you to do some sort of programming.

ADRIFT is different by being a completely GUI driven application, designed to be intuitive and easy to use. ADRIFT also has a long standing reputation for being the easiest system to use for creating interactive fiction.

ADRIFT has a separate editor for each item you want to add to your game. The editors are intuitive, and simply require you to fill in the descriptions, and make choices from dropdown menus.

About ADRIFT Developer

ADRIFT Developer is a Windows application that allows you to create complex interactive fiction games quickly and easily. **It allows you to concentrate on the story by making everything else easy, such as having all options available in**

dropdown lists, rather than you having to spend a lot of time just trying to figure out how to code the game. Games in ADRIFT are created by adding locations, objects, characters and tasks. These can be organised into folders, allowing you to group things together in a logical manner.

ADRIFT 5 Developer is free. However, if you enjoy the software and use it regularly you are encouraged to make a donation to support it's ongoing development.

ADRIFT Runner is the application used to play ADRIFT games. It currently runs on Windows, Mac, Linux and within Web browsers, effectively allowing ADRIFT games to run on any platform. Runner has a built in map, which follows the player's movements within the game, showing you everywhere you have been. The map is 3D and can be rotated to allow different view points.

Website includes reviews, forum, and popular game list. Still somewhat active. Currently at ADRIFT V5

61.Alan

<https://www.alanif.se/>

By [Thomas Nilsson](#) and [Göran Forslund](#), first version released in 1985, V3 released 2014.

“Alan is a tool for creating works of Interactive Fiction, a.k.a text adventures. It is easy to use. It's focus has always been on the authoring aspects.

Alan consists of a programming language and a set of tools to support working in that language to create games. The tools include a compiler, various flavours of runners/interpreters, a completely integrated development environment, a map generator and more.

Alan is in the final stages in moving towards version 3, and has entered beta state. This means that no incompatible changes are planned before release. So unless severe bugs or problems are found during the beta phase, games produced with a beta version should work even after release. So Alan V3 is now ready for supported production work.”

IF wiki page - <http://www.ifwiki.org/index.php/Alan>

An acronym for Adventure LANguage, **Alan** is an [authoring system](#) designed to make it easier for people unfamiliar with programming to write IF, or text-adventure games. It was created by [Thomas Nilsson](#) and [Göran Forslund](#) in 1985 and is continuously updated and maintained by [Thomas Nilsson](#).

The language features a self-documenting, English-like syntax, possibly inspired by COBOL, and several built-in classes of objects commonly used in IF. Version 3 of Alan comes with complete object orientation, inheritance and an extensive library. It supports author defined player syntax and input checks, customization of built-in classes through inheritance, actors that can perform scripted actions, events that can be scheduled, and rules that monitor the game world and triggers when a particular condition arises.

Primary platforms are Windows, MacOSX and Linux. Interpreters are either commandline or GUI (e.g. WinArun) or slot-ins in Gargoyle or [Thunderword](#).

Yahoo discussion group - <https://groups.yahoo.com/neo/groups/alan-if/info>

62.AXMA Story Maker

<http://sm.axmasoft.com/about.php>

New-ish Russian for interactive fiction with strong visual novel support features. Similar to Twine with a slightly different interface and design style, recommended by some IF writers.

63.ChoiceScript

<https://www.choiceofgames.com/make-your-own-games/choicescript-intro/>

By ChoiceofGames

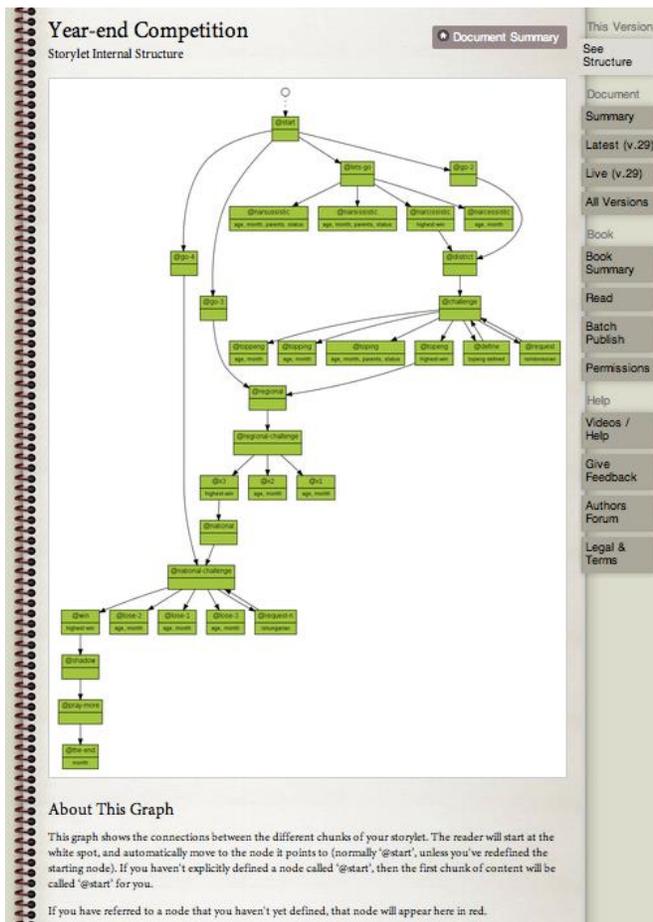
ChoiceScript is a simple programming language for writing multiple-choice games (MCGs) like Choice of the Dragon. Writing games with ChoiceScript is easy and fun, even for authors with no programming experience.

Seems targeted at programmers who want to get into IF. Quite successful in its own community, though.

<http://tvtropes.org/pmwiki/pmwiki.php/Creator/ChoiceOfGames>

Choice of Games' page on TVtropes.com, includes a list of successful games.

<https://www.choiceofgames.com/dragon/>



Choice of the Dragon

64. Erasmatazz Encounter Editor

<http://www.erasmatazz.com/library/software/encounter-editor.html>

By legendary game designer Chris Crawford.

“The Encounter Editor is the simplest possible introduction to interactive storytelling. It contains all the essential elements used in interactive storytelling. An Encounter is a two-ply dramatic interaction with a character, consisting of three steps:

1. The player reads text describing an event leading to an interpersonal dilemma.
2. The player must choose one Option among the several provided by the author.
3. The Antagonist (the other character in the interaction) reacts to the player’s choice.

The backstory for the Encounters is presented in the included materials. You already have the characters defined for you and their history. Your task is to create one or more Encounters that will be incorporated into the Siboot game.

The Encounter Editor is described in these three lectures. If you prefer text, read the manual included in the download.

Lecture #1: <https://youtu.be/yH-g7GLE0Uc>

Lecture #2: <https://youtu.be/l87BcwMMP6U>

Lecture #3: <https://youtu.be/JjU7OtMGcdM>

I expect that there shall be bugs and flaws in the manual, so please report them directly to me using the Contact Form above.

The Encounter Editor is a Java application. This will work fine on Windows and Unix, but Apple frowns on Java and so does not include it in the standard OS setup.

Here’s a short description of the backstory: the player is a colonist on Kira, a moon of the planet Lamina, which was cut off from the home planet by a nuclear war [goes on for like 10 lines...] Pretty much just Dick and Jane and Spot.

Seems like you’re stuck writing variations of one story here, that integrate into some sort of database relating to Crawford’s ambitious game Siboot - <http://siboot.org/>

“Siboot is a game about character interaction.

Characters communicate in a symbolic telepathic language; they gossip, emote, lie, threaten, plead, make deals, and cheat on deals, all in an effort to obtain crucial information that will help them prevail in nightly dream combat pitting Power against Virtue against Truth.

Logic and fast reflexes won't help you win this game: you'll need social intelligence and emotional intuition.”

This is maybe too idiosyncratic to fully be called an authoring tool, but definitely interesting to see what Crawford had in mind here. I’ll watch the youtubes at some point.

65.Fractive

<http://fractive.io/>

New tool (launched during the last 2-3 months)

“Fractive is a hypertext authoring tool, primarily intended for the creation of interactive fiction.

Stories are written in Markdown , and (optional) game logic is added with Javascript . The results are kind of like Twine , but the authoring process is very different.

Fractive has three core goals:

Keep story text readable, unencumbered by the details of scripted game logic and with minimal additional syntax

Don't require any scripting at all for basic “choose your own adventure” style games, and use complete, standard Javascript for custom/advanced game logic

Compile finished stories to portable HTML which can be played on any (reasonable) browser, platform, and device

How does it work?

Check out the live demo. It's a Fractive story that teaches you how to write Fractive stories! ([ingrained in the webpage](#))

Fractive is built on Node.js , so you'll need to install that if you don't already have it. (Fractive currently targets version 8.9.0 LTS.)”

Github page: <https://github.com/invicticide/fractive>

“**Markdown** is kind of like a computer programming language for text. It lets you write plain text with just a few special symbols that can then be rendered into beautifully formatted HTML pages. It's so simple it can be learned in minutes, yet it's incredibly versatile and widespread across the modern web.”

“**Node.js**® is a JavaScript runtime built on Chrome's V8 JavaScript engine. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient. Node.js' package ecosystem, npm, is the largest ecosystem of open source libraries in the world.”

<https://nodejs.org/en/>

Gem's Storymap feature generates a scalable graphical representation of your narrative in real time. Expanding in sync with your story, the Storymap streamlines navigation and orientation within complex narrative structures.

CENTRALIZED COLLABORATION

A single, secure cloud-based workspace facilitates seamless collaboration at every step of the development process. Synchronous editing and consistent version control keeps every member of your team engaged, informed, and versatile.

AUTOMATED ASSET MANAGEMENT

Characters, settings, items, mechanics, and more - everything that makes up your interactive experience will be instantly tagged and defined. In-depth reports and breakdowns on your story components will always be a click away.

TOOLCHAIN INTEGRATION

With unique asset-by-asset identifiers and .JSON export, you will be able to easily harness and integrate your Gem script data into your team's development toolchain.

SUPERIOR SUPPORT

Dedicated customer success agents and hands-on training ensures that your team stays productive. Celtx provides tailored customization and enhancements that exceed production requirements.

Additional links

tool in wikipediaAuthoing : https://en.wikipedia.org/wiki/Authoring_system

67.HUGO

<http://www.generalcoffee.com/hugo/gethugo.html>

Historically important and possibly structurally interesting tool, that's dated but seems still alive-ish.

From IF WIKI:

<http://www.ifwiki.org/index.php/Hugo>

“**Hugo** is an abbreviation for the Hugo Interactive Fiction Development System, a freeware programming language developed by [Kent Tessman](#) for creating IF games. Its structure and style of

programming is similar to [Inform 6](#) and [TADS 2](#), making use of both attribute-setting/clearing and class inheritance in defining objects. It inherits Inform's strong "object tree" structure in dealing with manipulation of [objects](#) (e.g., when a mug is being sent to the player, this is written as "move mug to you" ['you' being the chosen label for the [player character](#)]), as well as TADS's usage of pre-defined object classes (such as 'scenery', 'character' and 'attachable') in further defining object behavior.

Hugo 3.1 offers the following multimedia support : MOD, S3M, MP3, MIDI, XM, WAV for sounds, JPG for images, AVI and MPEG for videos."

The latest stable release is 3.1.03 / January 5, 2006.

68.INK

By Inklestudios

<https://github.com/inkle/ink>

Tutorial

<https://github.com/inkle/ink/blob/master/Documentation/WritingWithInk.md>

Ink is a scripting language built around the idea of marking up pure-text with flow in order to produce interactive scripts.

At its most basic, it can be used to write a Choose Your Own-style story, or a branching dialogue tree. But its real strength is in writing dialogues with lots of options and lots of recombination of the flow.

Ink offers several features to enable non-technical writers to branch often, and play out the consequences of those branches, in both minor and major ways, without fuss.

The script aims to be clean and logically ordered, so branching dialogue can be tested "by eye". The flow is described in a declarative fashion where possible.

It's also designed with redrafting in mind; so editing a flow should be fast."

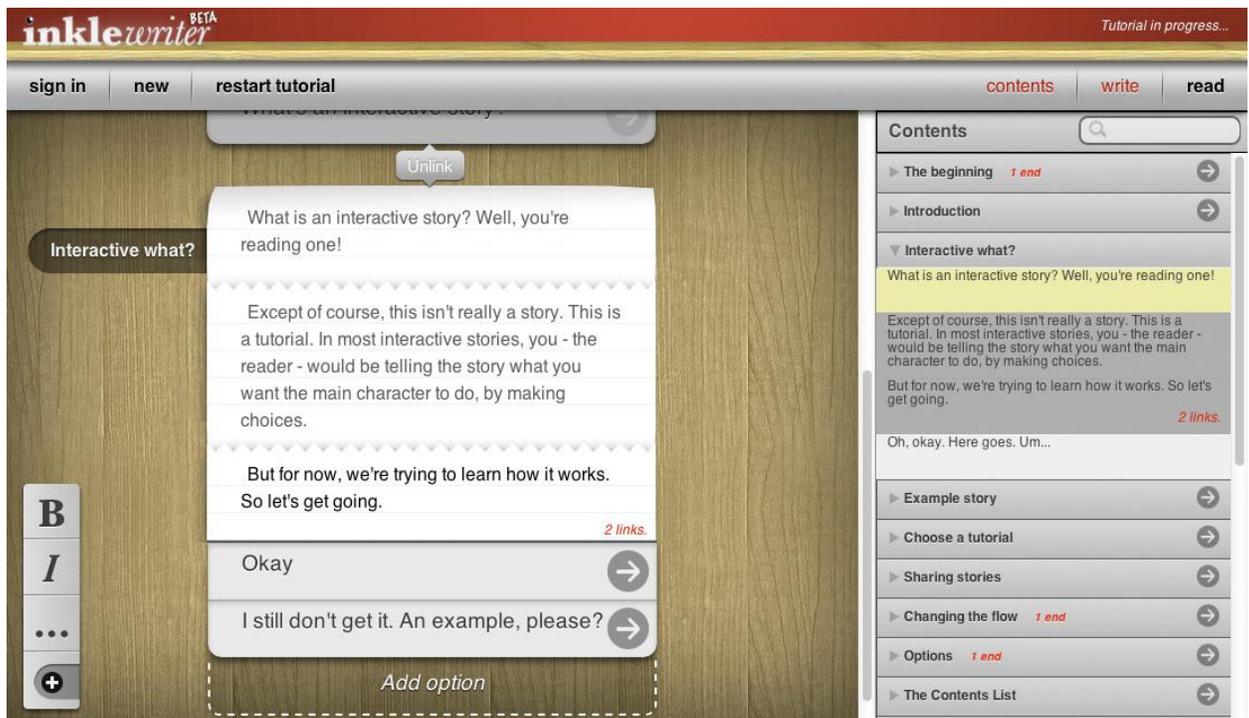
https://www.gamasutra.com/blogs/JosephHumphrey/20160330/268974/Open_sourcing_80_Days_narrative_scripting_language_ink.php

Blogpost – [Inklewriter founder Joseph Humphrey \(alongside Jon Ingold\) announces Ink in 2016.](#) Essentially, Ink is open-sourcing the code they used for 80 Days. A more complex and programming-oriented parallel to InkleWriter?

69.InkleWriter

<https://www.inklestudios.com/inklewriter/>

By InkleStudios. Critically acclaimed and apparently promising hypertext tool.



At inkle, we believe it takes great writers to tell great stories.

That's why we've created inklewriter, to help writers tell interactive tales with the minimum of fuss. inklewriter keeps your branching story organised, so you can concentrate on what's important – the writing.

inklewriter is a free tool designed to allow anyone to write and publish interactive stories. It's perfect for writers who want to try out interactivity, but also for teachers and students looking to mix computer skills and creative writing.

Write as you play

The inklewriter lets you write as you play, branching the story with choices, and then linking those branches back together again. It keeps track of which paths you've finished, and which still need to be written.

There's no set-up, no programming, no drawing diagrams – so there's nothing between you and the empty page. Oh, and it's free to use. And once written, you can share your stories with whomever you like.

Your stories, to share

Every writer needs a readership, and with inklewriter you can share your story with the world, because every story is given its own unique web-page that you can share however you want.

The Future Voices Anthology

To support new writers and interactive story-telling, we ran a competition for inkewriter fiction. Judged by a panel of publishers and game designers, the winning 11 stories are available in the free Future Voices app, for iPad and iPhone. Read more about it here.

2013 interview with Jon Ingold, "longtime text-game author (Fail-Safe, All Roads), now spearheads interactive fiction innovations at Cambridge, UK-based Inkle." – also on the general supposed-renaissance of hypertext writing -
https://www.gamasutra.com/view/feature/188458/roundtable_the_interactive_.php

70.Literatonic\Literatronica

<http://www.literatronica.com/src/initium.aspx>

By Juan Gutierrez & Mark Marino

In limbo – last update 2007

Wikipedia entry: <https://en.wikipedia.org/wiki/Literatronica>

<http://writerresponsetheory.org/wordpress/2006/05/22/literatronica/>

“Hypertext literature is ready for a new tool and it’s name is Literatronica (aka Literatronic).

This bilingual system, developed by Colombian mathematician and author Juan B. Gutierrez, is here to change the way authors think about hypertext by providing an online application that answers several of the major problems with hypertext, namely, the problems of:

readers not knowing how much of a text has been read

readers encountering repeated lexias without artistic effect

Readers getting lost and not finding their way through the text

writers struggling to maintain large systems of static links

Of course, many of these bugs of other hypertext narrative story systems became features in the hands of skilled authors with modernist and post-modernist aesthetics, but there is another way.

What Literatronic is:

Literatronic is a dynamic hypertext authoring system which instead of relying solely on static hypertext links (for the system allows these as well), uses an AI engine to recommend the 3 best next lexias based on what you have already read.

How it works:

Authors input their lexias into the web interface.

Authors decide which lexias should be linked with each other

Authors assign a numeric “distance” between connected lexias. A passage which follows easily, or without much interpretive work might be a 5 while a passage that is distantly related might be a 25.

What the system does:

Out of these “distances,” the system creates a map. To help the reader traverse the map, the system runs a “shortest distance” algorithm to suggest paths. Because the system is dynamic, it can change paths according to the lexias the reader has already encountered.

How the reader encounters it:

The reader is presented with an opening lexia. At the bottom of the screen are titles and short teasers for 3 possible subsequent lexias. Percentages beside the titles of these lexias indicate “narrative continuity,” as the higher percentages indicate greater linkage. When there is only one subsequent page, the system merely offers a “next” button.”

Readers can choose any of up to four links; however, once a page has been read it is removed from the?bullpen of choices. If readers want to go back, they can access the “map,” and reset pages to “unread.” This feature allows the system to show its true dynamic powers, as a system can rearrange sequence in a way that static links cannot.

[...]

New addition: the relative distance (Attractors)

In any case, hypertext writing here has a new semiotic element, the relative distance. Rather than thinking in hypertext terms, which elements should be linked, the author considers levels of kinship, affinity, connection.

But the reader carves their own paths as well!

The system reports reader activity so that authors can get a sense of what paths people are taking. In response, authors can change the distances.

Gradually the readers will cut through the grass, wear it down to just dirt, and authors can lay the concrete on top in response — assuming the author has an interest in what the reader’s like to do.

Juan Gutierrez’s hypertext optimization system Literatronica radically revises the 1990s notions of literary hypertext as Modernist collage to the “original” notions of Arpanet as document sharing, where speed of access was put before what Aarseth calls the aporia of links. In short, he asks, is nonlinearity and disruption inherent to the medium.

Of specific interest to Gutierrez, was the issue of “**conditional links**,” which he saw as limited in terms of difficulty of maintenance.

[...][Stemming from work Gutierrez originally undertook for the Colombian government, Literatronic offers the ability to present texts in parallel versions in English and in Spanish.

Some sample tales are currently available on the website. (Note: Some use the adaptive hypertext system, while others are “classic,” presented sequentially as if in print)”

Gutierrez, Juan B., and Mark C. Marino. "Literatronica: adaptive digital narrative." Proceedings of the hypertext 2008 workshop on Creating out of the machine: hypertext, hypermedia, and web artists explore the craft. ACM, 2008.

2006 interview with Gutierrez on the tool:

<http://writerresponsetheory.org/wordpress/2006/08/29/literatronica-an-interview-with-creator-juan-b-gutierrez>

“A Show of Hands”: sample story written on the tool by Marion

http://collection.eliterature.org/2/works/marino_ashowofhands.html

71.Ramus

http://notimetoplay.org/cgi-bin/wiki/Hypertext_doesn%E2%80%99t_get_much_easier

By NoTimeToPlay, released 2011. IF tool focused on accessibility and being easy-to-learn for authors with HTML knowledge, often hailed in the Infiction ‘other tools’ forums.

“Hypertext: it doesn’t get much easier”

Ramus is a lightweight system for creating self-contained hypertext documents. In less pompous words, you can have a whole mini-website in a single HTML file, and a small one at that. Ramus runs on less than 15K of Javascript (of which only about 40 lines of code are absolutely essential), and you get to write your story in plain old HTML.

Now, while these qualities are relatively unique, the concept is not. So why make yet another such tool?

To make it perfectly clear, if you want to write simple stateless hyperfiction, plain HTML is more than adequate. A wiki engine is even better, but it makes taking your work with you a pain. Unless you use

TiddlyWiki, which also presents a unique advantage: the ability to navigate your story even as you're writing it. Unfortunately, TiddlyWiki comes with a 350K overhead -- equivalent to the text of a novel.

But my primary source of inspiration wasn't TiddlyWiki. It was Undum, a system for hypertext interactive fiction with an emphasis on aesthetics and many features that seek to emulate the gamebooks of old. The bad news? You're expected to write your story in clumsy, non-idiomatic Javascript. That, and it trails a whole gallery of dependencies after it. So much for easily taking your work with you.

So one of my primary goals for Ramus was to let authors write in good old HTML, at least until they need something fancy such as conditional text.”

72.Satu Text Game Maker

<http://satugam.es/>

With SATU - Text Game Maker © you can create your own Text Adventure Games. Games are Multi-selection so no typing is required for the game play. With SATU - Text Game Maker it's easy to create complex Interactive Fiction and if you want, go with ANSI-graphics to gain that nice old retro DOS-look.

73.Squiffy

<http://textadventures.co.uk/squiffy>

<https://github.com/textadventures/squiffy>

By Text Adventures

Very simplified, browser-based tool

“Squiffy - A simple way to write interactive fiction

Squiffy is a tool for creating interactive fiction - that is, multiple choice games that focus on text and story. Players navigate through the game or story by clicking links. Sometimes these kinds of games or stories are known as gamebooks.

Squiffy is free and open source. It creates HTML and JavaScript, so you can upload it to your own website, or you can upload your games for free to textadventures.co.uk. You can also turn your game into an app using PhoneGap.

A player's state is automatically saved to their browser's local storage, so they can always pick up from where they left off just by going back to the same web page.”

Intro youtube video: https://www.youtube.com/watch?v=axT08_w_f2w

74.Storealis

<https://storealis.com/>

New publishing and authoring platform, seems geared for the smartphone, short-attention-span era. Launched 2017.

“Stories where your decisions matter

Storealis provides a complete ecosystem for creating & consuming modern interactive stories.

MODERN

Quick time events (QTEs), mass stats, markdown formatting, images/video/audio, auto saving, slots, monetization & more!

SHORT & SWEET

Have a busy day? A card's text is limited to a certain length so you're never reading endless walls of text, and make choices more often instead.

SIMPLY ENTERTAINING

Entertainment distilled into it's purest form: no clutter or ads & nothing to download. Works in your browser, desktop or mobile.

How many are reading?

See how many people are reading your stories. Visible to readers & writers.

1-click publish

Stories you publish are listed at our Discover directory, so you could easily get readers.

Stars & popularity

Readers get to star their favourite stories & writers get rewarded.

DISCUSS YOUR FAVOURITE MOMENTS

Join a community of like-minded people.

Cloud saving

Everything you do, be it writing or reading, is automatically saved to the cloud so you could switch to another device with no hassle

Mobile support

The entire website was designed to be mobile-first so you could pick up where you left off on your smartphone anytime

Quick time events

Make some choices time-limited to add to the immersion (ie. telltale style choices).

Formatting & Media

With both markdown formatting & basic HTML support, stories can include images, GIFs, videos, audio, & more!

Variables

Variables like "life" or "money" that you define affect story flow and provide a game-like experience.

Mass stats

See what choices others made in percentages, or what stats they had!

More choice, less text

Stories have a character limit before a new choice should be made, achieving the perfect text-to-choice ratio!

Monetization

Stories are opted into a Pay What You Want model, or authors can set a traditional price tag.

Slots

Relive the experience multiple times with different choices by saving to five cloud-backed slots per story!"

Infiction thread: <https://www.intfiction.org/forum/viewtopic.php?f=49&t=21239&start=10>

75. Story Explorer

<https://www.robotsprojects.co.uk/apps/storyexplorer/>

By RobotsProjects, launched 2012. Web portal\writing platform for branching stories.

"Fiction With A Difference

The stories you'll find here are all written by explorers like you, and they all have one thing in common; in these stories you choose what happens, every step of the way!

Welcome to Story Explorer.

We have escapism on tap, in our unique flavour.”

‘Write’ page:

Kind of a unique suggestion/conceptualization for the writing process.

“Creating an interactive story here is as easy as writing a blog, just hit the New Story button in the Your Drafts box to get started. It helps to plan your story before you write it though, we recommend these steps:

1 Ideas: Decide what type of story you want to write and what it will be about. Create an ideas sheet and jot this down. [example]

2 Chapters: List about five locations for the story to take place in. These will be the chapters of your story. [example]

3 Passages: Using a whole new sheet, list maybe ten events to happen in the first chapter. These will be passages. [example]

4 Links: Draw a box around each of your passages, and connect them with arrows. The arrows will be your links. [example]

5 Choices: Add in some extra passages and links. Experiment to make shortcuts, detours, and dead ends. [example]

6 Repeat: You now have a solid chapter plan for the first chapter. Create plans for the other chapters too.

7 Complete: Admire your awesome interactive story plan ...and then laugh like an evil genius! White cat optional.

You can preview your story as you write it. When it's complete, publish it to add it to your profile page. Your published stories also appear on the Read Stories page for everyone to read, rate, and share! You can even share them straight to Facebook, Twitter, and StumbleUpon yourself for your friends to find and read.”

76. StoryLab (Adventure Cow)

<http://adventurecow.com/storylab>

Adventure Cow is an IF publishing platform, mostly for Twine games. Recently released StoryLab, a browser authoring environment.

“StoryLab makes it easy for everyone to make games - by writing them like stories.”

Conversation on using StoryLab in the classroom:

<https://adventurecow.tumblr.com/post/117701352801/storylab-for-teachers-a-conversation>

Youtube playlist on Storylab basics:

https://www.youtube.com/playlist?list=PLMnalolVI2lz1F8E8nBNi_L3d2tpUqcSn

77. StorySpace (Eastgate)

<http://www.eastgate.com/storyspace/>

Alive, though past its prime.

Mac only (though claims to be available for Windows, also in the Wikipedia entry, historically worked on Mac and no Windows version on the website it seems).

Very expensive: Costs 149\$ (free limited demo). Bernstein's Tinderbox (interactive annotation and notetaking) is 249\$. A single story in their catalogue is at least 20\$. Mark Bernstein's tutorial book "getting started with hypertext narrative is on sale for 25\$. Basically, very hardly accessible.

Yet clearly the most successful and acclaimed by the academic and artistic communities (at least in the 90's). Eastgate's Mark Bernstein gave a talk at the ICIDS workshop about ethical aspects of agency – critiquing the player-as-hero model – that had little to do with authoring tools, basically a philosophical and politically-critical reflection on authoring.

Wikipedia entry: <https://en.wikipedia.org/wiki/Storyspace>

"Storyspace was the first software program specifically developed for creating, editing, and reading hypertext fiction. It was **created in the 1980s by Jay David Bolter and Michael Joyce, who presented it to the first international meeting on Hypertext at Chapel Hill in October 1987.**

Several classics of hypertext literature were created using Storyspace, such as *Afternoon*, a story by Michael Joyce, *Victory Garden* by Stuart Moulthrop and *Patchwork Girl* by Shelley Jackson.

Storyspace has also been used extensively in secondary and tertiary education for teaching writing skills and critical thinking.[3][4] It has been used for teaching creative writing in particular,[5] and was especially popular in the early years of the web when hypertext linking was less fluid and web pages had to be hand-coded in HTML. Proponents argue that Storyspace's visual maps of how hypertext nodes or lexia are connected allow students to focus on writing in hypertext rather than on technical issues, and that linking and/or visually juxtaposing ideas allows students to develop a visual logic."

Official site: introduction

Storyspace is a tool for complex, interlinked narrative, both fiction and nonfiction. Twenty years ago, the original Storyspace ushered in the era of serious interactive writing with works

like Michael Joyce's afternoon, a story ("a graceful and provocative work ... utterly essential to an understanding of this new art form" – Robert Coover, NY Times Book Review) and Shelley Jackson's Patchwork Girl ("A cult hit" – The Village Voice). **Now, Storyspace has been updated, extended, and reconceived using fresh technology and design.**

Storyspace 3 works with existing Storyspace files and creates new Storyspace documents in a robust, state-of-the-art XML format. Legacy Storyspace work immediately takes advantage of Storyspace 3's outstanding new typography.

Storyspace 3 works seamlessly with Tinderbox, with which it shares files. Tinderbox is designed for making, visualizing, and analyzing notes, making it ideal for the early stages of ambitious projects. Storyspace is designed for writing and reading interlinked narrative; many writers will move freely between Tinderbox and Storyspace.

Hypertext Narrative

Storyspace 3 is a tool for writing and reading hypertext narrative, for fictional and nonfictional stories told with links. **Long the tool of choice for serious hypertext writers, Storyspace now offers new features, new tools, and unmatched elegance for handling complex stories with ease.**

For a limited time, Storyspace 3 includes a preview release **of Mark Bernstein's Getting Started With Hypertext Narrative, with over 200 pages of discussion, examples, and writing exercises. From the earliest experimental hypertexts, writers have learned that simply linking pages together isn't enough.** What works in small web sites leaves readers wandering and adrift in book-length environments. **Storyspace solved the problem back in the 1990s with guard fields that activate and disable links as the reader moves through the document.**

Storyspace 3 supports classic Storyspace guard fields and extends them with a new, easy-to-learn syntax that adds lots of power and flexibility. You can mix old and new guard fields freely.

Sculptural Hypertext

Familiar hypertext tools support calligraphic hypertext, hypertext that begins without links and lets the writer link things that should be connected. Storyspace 3 adds sculptural hypertext tools as well. Sculptural hypertext begins with densely linked bundles like decks of cards, from which the reader might select pages in any sequence. But Storyspace hypertexts aren't just random: writers can remove links and enforce constraints so the hypertext organizes itself. **Sculptural hypertext encourages painterly narrative in which the writer controls what she knows to be necessary while relaxing control over the reader when control might not be needed.**

Storyspace 3 is a hypertext writing environment that is **especially well suited to large, complex, and challenging hypertexts**. Storyspace focuses on the process of writing, making it easy and pleasant to link, revise, and reorganize.

Storyspace 3 is available for Macintosh computers and runs on macOS Sierra, El Capitan, and Yosemite.

Storyspace creates hypertexts that you are free to publish and redistribute. A redistributable stand-alone reader for OS X will be available shortly, and readers for iPad will follow. Additional reading environments for the Web and for Windows are anticipated as well.

Storyspace excels at creating rich hypertext structures. The unique and powerful Storyspace **map shows each hypertext writing space and each of its links**. Because writers can add, link, and reorganize by moving writing spaces on the map, Storyspace encourages creative exploration and flexibility.

Storyspace is best known as the tool of choice for serious hypertext writers. Because Storyspace is easy to use, and because it helps writers to visualize and manipulate their work, Storyspace is also **popular in writing courses and workshops throughout the world**.

Storyspace overview

A Hypertext Tool for Writers and Readers

Storyspace is a hypertext writing environment, especially well suited to creating large, complex, and challenging hypertexts.

Storyspace is designed for the process of writing. **Where other systems often emphasize visual presentation, Storyspace emphasizes writing, linking, and organizing. Storyspace creates and follows links quickly and directly.**

Most importantly, Storyspace gives you live, informative and powerful graphic views of hypertext structures.

The Tools Authors Need

Each place in a Storyspace hypertext is a writing space. Writing spaces contain text, pictures, and other media. To link two writing spaces together, just draw a line between them.

For working with hierarchical structure, **you can drag writing spaces inside other writing spaces** to organize and reorganize your writing.

Storyspace gives authors and readers multiple ways of viewing and mapping the hypertext, to see both the hierarchical structure and the links. Charts, outlines, and maps are instantly available. You can keep many views open at once.

Storyspace creates hypertexts that you are free to publish or redistribute without royalty, and also exports to the Web. It is an ideal storyboarding tool for all interactive media.

Using Storyspace, you can create all the links you want with unprecedented freedom. Make links with just a click of the mouse -- then use Storyspace's tools to organize and link complex information. When you are done, Storyspace can translate your document into HTML, ready to use with other Web tools or to upload to your server.

How is Storyspace used?

Storyspace is best known as the medium for many of today's most notable published hypertexts. Well-known Storyspace hypertexts include such important nonfiction works as George P. Landow's *The Dickens Web* and David Kolb's *Socrates In The Labyrinth* , as well as such major hypertext fiction as Michael Joyce's *afternoon, a story* and Stuart Moulthrop's *Victory Garden*. [...]

Web designers use Storyspace to plan and implement ambitious Web sites. Storyspace maps help designers visualize the structure of a new site, and Storyspace's swift tools for linking and organizing let designers plan complex link structures with confidence. Web sites made with Storyspace range from storytelling to technical communication.

Storyspace has a long history of use in classrooms, ranging from secondary schools through graduate programs. Hypertexts written with Storyspace are found in libraries throughout the world.

Storyspace maps

Storyspace provides a variety of maps and views to help writers create, organize, and revise. Each view is live -- items can be selected, moved, cut and copied freely.

The most powerful and distinctive Storyspace view is the Storyspace map:

Writing spaces

[...]

Storyspace links connect specific sections of text, images, or entire writing spaces. **Link adapt instantly whenever you move or edit a writing space. Storyspace links are never broken.**

Creating a link is as simple as drawing a line. **Storyspace links can even change their behavior as each reader progresses through a hypertext.**

Storyspace writing spaces are tangible objects -- things you can pick up, arrange, and rearrange as your ideas change or as you discover new information. Organizing, clustering, and revising are natural and pleasant; because moving things is easy and because links retain connections automatically, many writers find that trying new organizations is easier and less threatening in Storyspace than in conventional tools.

Much of the best-known hypertext fiction that has appeared to date was written using Storyspace, starting with Michael Joyce's pioneering classic, *afternoon, a story*. Eastgate publishes an extensive catalog of fine, original hypertext, both fiction and nonfiction.

78.TUVI

<https://github.com/jaywengrow/tuvi>

Github project for very simplified code-based IF authoring tool, accessible to young children and usable in classes. Interestingly enough, it declares itself as employing IF with some basic coding functions as a sort of 'lure' to make children generally interested in programming logic.

"Tuvi is a computer language that can be taught to children in a matter of minutes. With Tuvi, kids can create text-based games and applications. The goal is to give children a taste of what computer programming is about, and how exciting it could be.

[...][It is a Ruby DSL which provides a simple way to declare the flow of the program as a series of steps. Although the below example demonstrates the use of Tuvi in creating a Choose-Your-Own-Adventure type game, it can be used for any text game or application. Tuvi was written in order to introduce programming to my son, Tuvi!"]

79.Twine

By Chris Kilmas.

"Twine is an open-source tool for telling interactive, nonlinear stories."

The most alive and kicking hypertext tool and community. While still niche-sized in its community, and while some of the focus seems to have drifted to designing generic games, driven more by game-mechanics and graphics than narrative, since Twine 2. Nonetheless, very interesting, highly expandable, and has been used for some great products.

Twine is being used in IDN classes by Janet Murray at Georgia Tech and by others, including Hahn and Salter who wrote papers on its classroom use, and has been the subject of much academic interest in the IDN community, particularly for a non-academically developed tool.

Carrey's Phd dissertation argues that Twine is "probably the closest to Murray's vision of software that allows writers to select, arrange and experiment with narrative building blocks" (2018, 28).

Papers:

Carey, Benjamin P. The architect of forking paths: Developing key writing strategies for interactive writers. Diss. Queensland University of Technology, 2018.

Kolb, David. "Narrative hypertext, on the level." In Proceedings of the 3rd Narrative and Hypertext Workshop, p. 3. ACM, 2013.

Hahn, Richard. "Collaborative Creative Writing in the L2 Classroom Using the Software Twine." In Conference Proceedings. The Future of Education, p. 137. libreriauniversitaria. it Edizioni, 2016.

Friedhoff, Jane. "Untangling Twine: A Platform Study." DiGRA Conference. 2013.

Ruggiero, Dana, and Laura Green. "Make good choices: exploring narrative game design with young people in prison." Proceedings of the The 15th International Conference on Interaction Design and Children. ACM, 2016.

Salter, Anastasia. "Learning Through Making: Notes on Teaching Interactive narrative." Syllabus 4, no. 1 (2015).

Starks, Katryna, Dakota Barker, and Alayna Cole. "Using Twine as a Therapeutic Writing Tool for Creating Serious Games." Joint International Conference on Serious Games. Springer, Cham, 2016.

You don't need to write any code to create a simple story with Twine, but you can extend your stories with variables, conditional logic, images, CSS, and JavaScript when you're ready.

Twine publishes directly to HTML, so you can post your work nearly anywhere. Anything you create with it is completely free to use any way you like, including for commercial purposes.

Twine was originally created by Chris Klimas in 2009 and is now maintained by a whole bunch of people at several different repositories."

"Twine is the closest we've come to a blank page. It binds itself and it can bind itself along an infinite number of spines extending in any direction.

-Porpentine"

From Twine's wiki:

https://twinery.org/wiki/twine2:what_can_you_build_with_twine

"At its heart, Twine is a tool for creating hypertext. The difference between hypertext and a linear story, the kind found in books and magazines, is that it allows the reader to have some measure of agency. [...] The convention that has emerged over the past three decades is that readers navigate hypertexts by clicking links. In this sense, you're already a seasoned hypertext reader. You clicked several links to reach this text, after all, and you've probably clicked an uncountable number of links in your life so far.

Because hypertext branches so much, it's easy to get lost in your own work. Much of Twine is dedicated to helping you keep track of your work's structure visually with a story map, so you can see what your readers' experience will be like.

Can you build games with Twine? Of course! Twine has the capability to do conditional logic, so if the protagonist finds a key in an early part of the story, he or she can use it to open a door later on. **It can also incorporate variables,** which encompass the traditional trappings of games such as hit points and score. These, along with agency, are foundational concepts of interactivity, the currency of game design."

Open source API, but relatively few extensions developed.

Community discourse: defunct forum, now focused on official site Q&A + SubReddit.

Most products in the first years seems more focused on hypertext and personal, often politically charged storytelling. The Twine 2 discourse – particularly the youtube series –

seems more technically inclined and focused on how to imitate generic games (such as a dungeon crawler).

New York Times article from 2014: <https://mobile.nytimes.com/2014/11/23/magazine/twine-the-video-game-technology-for-all.html?referrer>

Anna Anthropy Intro - <http://www.auntiepixelante.com/twine/>

Reddit group - <https://www.reddit.com/r/twinegames/>

Interactive fiction archive - <http://ifdb.tads.org/>

<http://ifdb.tads.org/search?searchbar=TWINE&searchGo.x=0&searchGo.y=0>

642 results for Twine (not everything's logged there, for sure over a 1000 have been created, 200+ just in Porpentine's 2015 jam)

<http://adventurecow.com/tags/7> - free hosting portal, short reviews of works submitted

Technical Twine II youtube tutorials -

<https://www.youtube.com/playlist?list=PLIXuD3kyVEr5tlic4SRe6ZG-R9OyS1T4d>

Gammastura Twine tutorial:

https://www.gamasutra.com/blogs/DanCox/20130203/185939/Learning_Twine_Part_1.php

The Interactive Fiction Technology Foundation's official Twine Committee (chair: lead dev Chris Kilmas)

<http://iftechfoundation.org/committees/twine/>

Interactive tutorial written on Twine: <http://aliendovecote.com/twine101/#/>

<http://www.melissafordauthor.com/writing-interactive-fiction-with-twine/>

Twine writing guide book.

Depression quest – controversy around successful Twine game released on Steam

<https://www.polygon.com/2014/8/13/5998567/depression-quest-launches-high-profile-suicide-robin-williams-threats>

Propentine (probably the most famous Twine writer) manifesto

<http://nightmaremode.thegamerstrust.com/2012/11/25/creation-under-capitalism/>

INTERACTIVE FICTION

When it comes to feeling something true, a handful of words can outweigh millions of dollars of investment in cutting-edge graphics.

Say I want to communicate that a jungle exists. **I could create a jungle out of code, sound files, art assets, or I could describe it in a few well-chosen sentences. They aren't the same, but one is cheaper. If we acknowledge that humans have an imagination, maybe we could make something of these, what do you call them, interactive fictions?**

Most importantly, anyone reading this sentence can make interactive fiction.

But I can understand why not everyone would feel that way, given interactive fiction's history. [...]

HyperCard, ancestor of the Internet and Wikipedia, was packaged with every Mac at one point in time. Anyone could use it.

HyperCard programs were made out of a stack of virtual cards, each card had interactive shit on it. People made calculators, virtual museum tours, games, and it was easy. The first version of some little old game called Myst was built in HyperCard.

Like Twine, you could start creating right away out of intuitive parts.

Like Twine, you could see the parts spread out in front of you.

Apple murdered HyperCard and now they represent the freezing pole of that ideal [...]

The reason for this is that HyperCard is an echo of a different world. One where the distinction between the "use" and "programming" of a computer has been weakened

and awaits near-total erasure. A world where the personal computer is a mind-amplifier, and not merely an expensive video telephone. A world in which Apple's walled garden aesthetic has no place. [...]

The only sympathetic depiction we can trust is the one we make ourselves, in love and tenderness and the desire for justice.

[...]

WHY TWINE?

ACCESSIBLE

Anyone can learn the basics of Twine in less than a minute. Anyone reading this can play your game. **No one has to download or install anything to read your story. It's just an HTML file.**

FREE

No one owns Twine. It belongs to everyone.

SPATIAL

Twine shows you the story as you make it, like notecards on a table. You don't get lost inside a morass of code. Each story is a unique organism of information.

LEGACY

It scales up with the entire legacy of HTML, CSS, and Javascript. It will not become outdated unless the entire internet is replaced by a global consciousness grid. The thousands of tools for those languages are available to us for extending, augmenting, colorizing, and aestheticizing our stories.

You can use the same palette generator used to design a webpage to give your story a color scheme.

TIME FRIENDLY

A side-effect of being a minority is exhaustion, loss of time. I have time for Twine. The stories of people who would not write them for lack of time, lack of energy, can be told. When you remove the code barrier, people are free to experiment without burning out.

VERSATILE

Hyperlinks can power an interactive poem, a choose-your-own-adventure full of gruesome deaths, a dungeon crawler tracking stats and inventory, a strategy game, wherever yOuR iMaGiNaTiOn TaKeS yOu

PERSONAL

So many people tell me their stories start to get personal no matter how they start out.

Twine's default color scheme is blue on black, not black on white. Black on white is daylight, it's mundane. Twine invites us to write our secrets into the night. We can make it light in a line of CSS, but that the default is inverted feels non-trivial to me.

More significantly, when we write in natural language, as opposed to code, we're in the element of the diary, the notepad, the confessional.

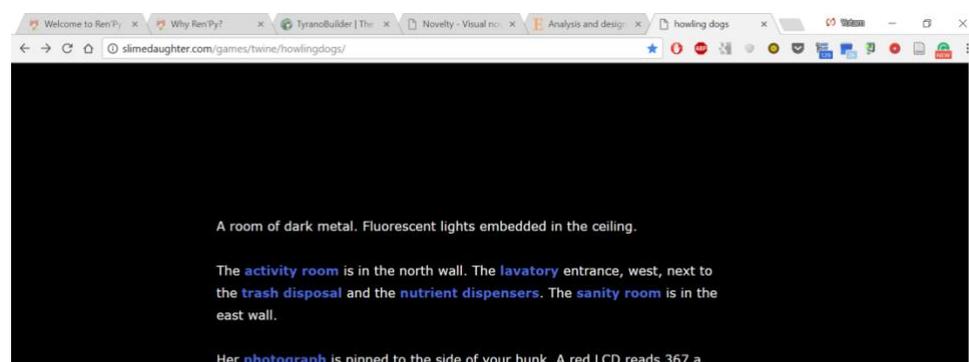
Our engines shape our output. We can't pretend that the history of game design has been designing on a blank canvas or a white page. The history of game design has been working with a canvas that screams at you and changes shape and rejects your strokes if they aren't just right—working with machines.

Not all of us want to become machines, some of us just want to have frank discussions with the machines.

Twine is the closest we've come to a blank page. It binds itself and it can bind itself along an infinite number of spines extending in any direction.

It's hard to visualize our problems and emotions when they get interrupted by code, but we know the feel of words. They've dwelt in us our whole life. They are alive and they want to come out.

Twine is the invitation to be personal.



Screenshot from Porpentine's *Howling Dogs* - <http://slimedaughter.com/games/twine/howlingdogs/>

Dead hypertext tools

Connection Muse\The Connection System

<http://www.wordcircuits.com/connect/#Download>

In Limbo

Kendall, Robert, and Jean-Hugues Réty. "Toward an organic hypertext." Proceedings of the eleventh ACM on Hypertext and hypermedia. ACM, 2000.

Abstract: "The Connection System is an adaptive hypermedia system for hypertext poetry and fiction. Its adaptive features can help maintain the large-scale structural integrity of the text that emerges during a reading, no matter what local navigational choices the reader makes. Authors can define structural components and specify adaptive behaviors for the textual and navigational elements within them. By establishing criteria for displaying links or text fragments conditionally, authors can encapsulate their understanding of structural possibilities to better guide the formation of the emergent structure without reducing the reader's agency or freedom of interaction. The system models the reader's knowledge of textual components and uses this model to guide adaptive behavior and give the reader a better sense of how structural elements are unfolding. We consider the problems involved with modeling the knowledge of a literary text, and we offer specific examples of how adaptivity can give the reader more control over the reading and make it more satisfying. "

Rencontre

https://elmcip.net/sites/default/files/media/critical_writing/attachments/bergen-rencontre.pdf

Quite clearly dead – no google results other than the initial webpage + paper PDF

IRIS project

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Rencontre>

“Rencontre is a research project dedicated to interactive narrative with both a theoretical and a practical approach. In this project, a computer model for interactive narrative is defined, as well as authoring and reading softwares based on this model. Authors are also involved in order to experiment and evaluate the tools. The Rencontre software environment is composed of an editor and several readers. The editor is developed in Java and exports XML files (interactive scenarios). Readers can be developed in various programming languages (Java, Flash, etc.). Readers import interactive scenarios as XML files.

When authoring a narrative within Rencontre, an author creates fragments, and groups these fragments into a hierarchy of containers called hypersections (see figure below). A fragment is mainly a content piece that can be displayed to a user. Hypersections can contain fragments, and can also contain other hypersections. Hypersections are structured into a hierarchy (i.e. a tree structure). This hierarchy of hypersections and fragments (fragments are leaves in the tree structure) and their type determine a set of reading paths on fragments.”

Réty, J.H., Szilas, N., Clément, J., Bouchardon, S. (2008). Authoring Interactive Narratives with Hypersections. In proc. of ACM International Conference on Digital Interactive Media in Entertainment and Arts, Athens, Greece, september 2008.

Réty, J.H., Bouchardon, S., Clément, J., Szilas, N. (2008). An experimental tool for digital literature, Elit in Europe conference. Bergen, Norway, septembre 2008.

Réty, J.H. (2007). Rencontre : un système informatique pour l’écriture et la lecture de récits non déterministes, in actes de H2PTM’07, Collaborer, Echanger, Inventer : Expériences de réseaux, 2007 (in French).

Parser

80.Alexa Interactive Adventure Tool

<https://developer.amazon.com/blogs/post/TxEQV5K754YS77/Announcing-a-New-Tool-for-Building-Interactive-Adventure-Games-on-Alexa>

By Amazon, announced 2016

“Today, we're pleased to make a tool with source code available to allow you to graphically design interactive adventure games for Alexa. Interactive adventure games represent a new category of skill that allows customers to engage with stories using their voice. With these skills, you can showcase original content or build compelling companion experiences to existing books, movies and games. For example, in The Wayne Investigation skill (4.7 stars, 48 reviews), you're transported to Gotham City a few days after the murder of Bruce Wayne's parents. You play the part of a detective, investigating the crime and interrogating interesting characters, with Alexa guiding you through multiple virtual rooms, giving you choices, and helping you find important clues. The Magic Door, an original adventure series for Alexa, enables you to tell Alexa what choices to make as you navigate a forest, a garden or an ancient temple. Learn more about game skills on Alexa.

This tool provides an easy to use front-end that allows developers to instantly deploy code for your story, or use the generated code as a starting point for more complex projects. It was written in Node.js by Thomas Yuill, a designer and engineer in the Amazon Advertising team. The tool is available now as a Github project”

Github page: <https://github.com/alexa/interactive-adventure-game-tool>

81.ChooseYourStory

“ChooseYourStory.com is a community-driven website centered on Choose-Your-Own-Adventure style storygames. Members create their own storygames, read and comment on other members' storygames, participate in the forum, and improve their writing ability.

ChooseYourStory.com is your source for online interactive fiction – with members all around the globe.”

82.Curveship

<http://curveship.com/>

A project either created or heavily supported by Nick Montfort and some other academics, with strong natural-language-processing ambitions. Launched under the current name in 2010, but relates to prior writing by Montfort.

“Curveship is an interactive fiction system that provides a world model (of characters, objects, locations, and things that happen) while also modeling the narrative discourse, so that the narration and description of the simulated world can change. Curveship can tell events out of order, using flashback

and other techniques, and can tell the story from the standpoint of particular characters and their perceptions and understandings.

The system has been developed up to this point with advanced users, such as researchers and programmer/authors, in mind. Some understanding of narrative theory, some understanding of interactive fiction, some ability to program in Python, and a willingness to use a command-line system are important to effective use of Curveship at this point. While I hope that Curveship, or components of it, will eventually be of use to a wide variety of users and developers, my initial goal has been to develop a system that will be of value to these groups of people:

Researchers in AI, computational creativity, commonsense reasoning, and other disciplines related to computer science;

Researchers, teachers, and students of narrative theory;

Researchers and developers in computer gaming, electronic literature, interactive drama, story generation, and related areas; and

Programmer/authors of interactive fiction.

Narrative variation means telling the same underlying events in different ways. It's a nice trick that writers and other storytellers have employed very effectively for thousands of years. Just as typical IF systems can model a fictional world, Curveship can apply different narrative styles—automatically, in a way that that an interactive fiction author determines and programs.”

<http://curveship.com/writing.html>

‘Writing’ page, which expands on the two most important components of the tool’s language/ontology: ‘rooms’ (spaces) and ‘actions’ (including possibility conditionals).

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1768

Montfort, Nick. "Curveship's automatic narrative style." Proceedings of the 6th International Conference on Foundations of Digital Games. ACM, 2011.

83.DINE – Data-driven Interactive Narrative Engine

“DINE is a web-based platform for creating branching storylines. Instead of choosing among options, players type their intentions as natural-language sentences. The underlying DINE technology automatically selects the most coherent outcome from a set of hand-authored possibilities, and the storyline moves forward from there. This approach makes it super easy to quickly author and deploy interactive textual narratives, and provides a path forward for immersive audio, video, and virtual reality scenarios with voice-enabled interaction.

Interested? Try one of these short examples:

Pull Over/Sleep Under : Keep on truckin'

Henry Avenue : The Larson farmhouse

The Queen : Royal fashion design

Featured Narratives

DINE makes it easy to author long-form interactive fiction, allowing writers to focus on telling compelling interactive stories, instead of computer programming.”

[...]”**DINE is a platform for creating interactive narratives that allow for free-text player input.**

In the style of the classic Choose-Your-Own-Adventure books, DINE structures interactive narratives around the Page, a single situation where the player must decide what to do next.

Each page describes the situation, and is associated with a set of possible Outcomes, the possible results of a player's actions. Some of these outcomes may take the player to other Pages, while others simply elaborate on the current situation.

When playing a DINE narrative, the free-text input of the player is automatically mapped to the most appropriate outcome by the computer. The technical innovation of DINE is to use Narrative Language Models to do this mapping, rather than traditional supervised machine learning techniques for text classification.

DINE was designed to allow creative writers a means of quickly authoring and deploying interactive narratives without the need for computer programming or special technical skills.

To learn about authoring narratives for DINE, see our [Writer's Guide](#).

DINE is also being used as a research platform for next-generation interactive narrative in Virtual Reality environments for training and entertainment.

DINE was built in the Summer of 2016 by Andrew S. Gordon, Jenna Bellasai, Meg Cychosz, Kayla Briët, Obiageli Odimegwu, Olivia Connolly, Cristian Guzman, Rob Fuchs, Melissa Roemmele, Christopher Wienberg, and Reid Swanson.

The Data-driven Interactive Narrative Engine is a research project led by Andrew S. Gordon (PI) at the Institute for Creative Technologies at the University of Southern California.”

84.Hypedyn

<http://narrativeandplay.org/hypedyn/>

Procedural hypertext authoring tool by Alex Mitchell & Kevin McGee (related to the Narrative & Play research studio at Singapore university)

Paper: <http://nht.ecs.soton.ac.uk/2012/papers/4-amitchell.pdf>

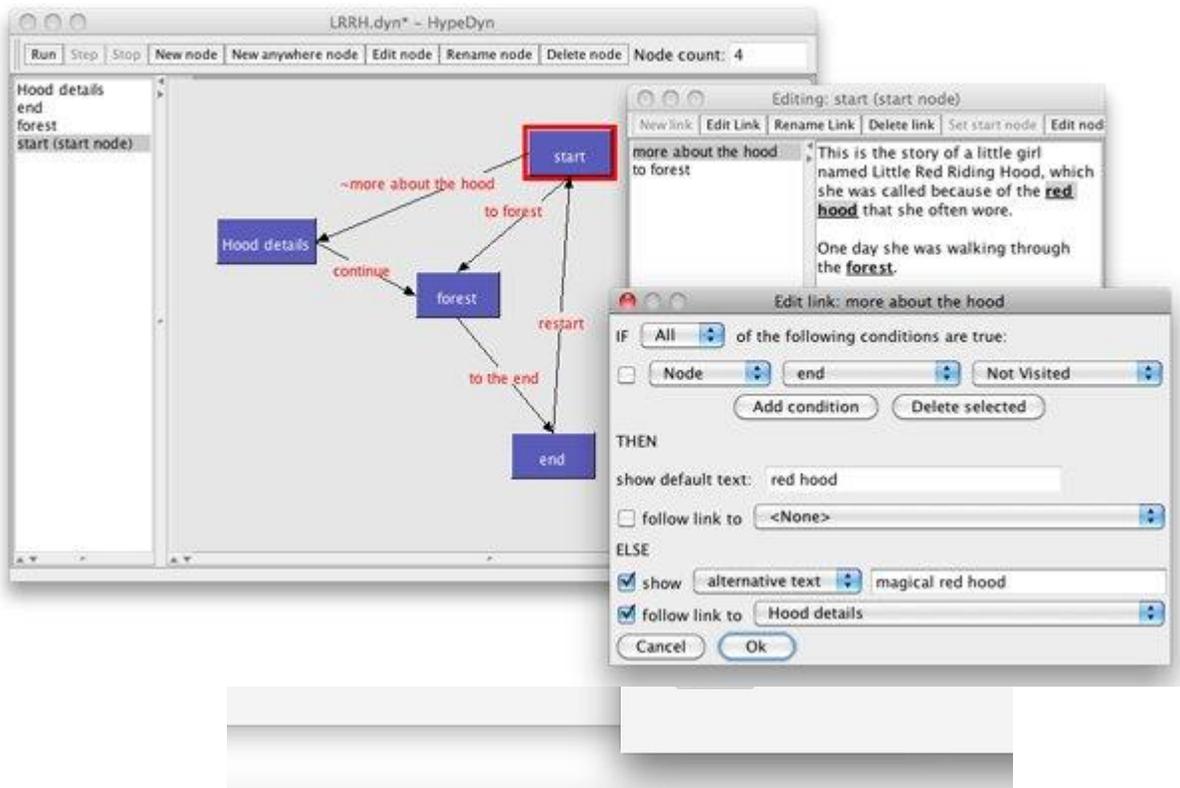
Facebook page: https://www.facebook.com/HypeDyn/?ref=py_c

“HypeDyn (pronounced "hyped in") is a procedural hypertext fiction authoring tool for people who want to create text-based interactive stories that adapt to reader choice. **HypeDyn is free to download and open source, and runs on Linux, MacOS and Windows.**”

“HypeDyn was developed as part of ongoing research into interactive storytelling at the National University of Singapore.”

“**HypeDyn supports visual authoring of adaptive hypertext fiction in which links and nodes may be varied procedurally as the result of past reader actions.** This allows for the creation of **procedural stories which are much more flexible and adaptive** than traditional hypertext. HypeDyn was **initially created as a teaching tool, and has been used since 2009 in an interactive storytelling class in the Department of Communications and New Media at the National University of Singapore.** It has also been used as a **tool for research**, providing a flexible platform for the exploration of issues of procedural change and readability in interactive stories. **Our experiences with HypeDyn suggest that hypertext**

constitutes a valuable paradigm within which to explore issues relevant to interactive storytelling in general.”



Youtube introduction: <https://www.youtube.com/watch?v=1JRLFr6K6g>

Latest Beta (HypeDyn 2.026): <https://github.com/narrativeandplay/hypedyn2/releases/tag/0.26-beta>

Redemption – a HypeDyn story: <http://narrativeandplay.org/hypedyn/gallery/redemption/index.html>

Narrative & Play Facebook page:

https://www.facebook.com/NarrativeAndPlay/?hc_ref=ARQld9I4lx9YLLWmQRyQDdwWsSltEfzIfi2ugxnZ_zeiDk5PBQal-gGYna4CuwU00i0&fref=nf

IRIS page:

http://iris.ofai.at:7777/iris_db/index.php/publications/show/692

Mitchell, Alex, and Kevin McGee. "Designing hypertext tools to facilitate authoring multiple points-of-view stories." Proceedings of the 20th ACM conference on Hypertext and hypermedia. ACM, 2009.

Abstract: "How can authoring tools help authors create complex, innovative hypertext narrative structures? Tools for creating hypertext fiction typically represent such narratives in the form of nodes and links. However, existing tools are not particularly helpful when an author wants to create a story with a more complex structure, such as a story told from multiple points of view. In this paper, we describe our work to develop HypeDyn, a new hypertext authoring tool that provides alternative representations designed to make it easier to create complex hypertext story structures. As an initial exploration, the tool has been designed to support authoring of interactive, multiple-points-of-view stories. In order to describe the tool, we describe a simplified transformation of Rashomon into a progressively more interactive narrative. Along the way, we identify useful new representations, mechanisms, and visualizations for helping the author. We conclude with some thoughts about the design of interactive storytelling authoring tools in general."

85. Inform7

<http://inform7.com/>

One of the first hypertext authoring tools. Established in 1993 and still active and alive. Version 6 launched in 1996 and was one of the most common adventure-game tools for a long time. Version 7 launched 2006, and today's stable version launched December 2015 and seems to be doing well for itself. Appears to be perhaps the 2nd most vibrant\discussed IF platform after Twine. In this case, the program is strictly open language command line based and favors old-school parser 'games'.

<https://en.wikipedia.org/wiki/Inform>

"Inform is a programming language and design system for interactive fiction originally created in 1993 by Graham Nelson. Inform can generate programs designed for the Z-code or Glulx virtual machines. Versions 1 through 5 were released between 1993 and 1996. Around 1996, Nelson rewrote Inform from first principles to create version 6 (or Inform 6).[2] Over the following decade, version 6 became reasonably stable and a popular language for writing interactive fiction. In 2006, Nelson released Inform 7 (briefly known as Natural Inform), a completely new language based on principles of natural language and a new set of tools based around a book-publishing metaphor."

"All versions of Inform generate files in Z-code (also called story files) from source code. These files can then be run by any Z-code interpreter – that is, by any program which properly implements the Z-code virtual machine (or Z-machine) specification. The Z-machine was originally developed by Infocom in 1979 for their interactive fiction titles. Because there is at

least one such interpreter for nearly every major and minor platform, this means that the same Z-code file can be run on a multitude of platforms with no alterations.

Andrew Plotkin created an unofficial version of Inform 6 that was also capable of generating files for Glulx, a virtual machine he had designed to overcome many of the limitations of the several-decades-old Z-machine. Starting with Inform 6.3, released February 29, 2004, Inform 6 has included official support for both virtual machines, based on Andrew Plotkin's work. Early release of Inform 7 did not support Glulx, but in August 2006 Glulx support was released.”

From the official website:

“Inform is a design system for interactive fiction based on natural language. It is a radical reinvention of the way interactive fiction is designed, guided by contemporary work in semantics and by the practical experience of some of the world's best-known writers of IF.

Interactive fiction

Interactive fiction lets the player explore your worlds and stories through text. Write adventure games, historical simulations, gripping stories or experimental digital art.

Code that reads like English

Inform's source reads like English sentences, making it uniquely accessible to non-programmers. It's very easy to get started. Watch a screencast.

Platform Independence

Inform runs under Mac OS X, Windows, Linux, and more. The games it produces can be played on an even wider range of platforms, including handheld devices, legacy computers and the iPhone. Download Inform for your platform.

Support for Teachers

Inform is used in the classroom by teachers at all levels from late elementary school through university. Playing and writing interactive fiction develops literacy and problem-solving skills and allows the development of historical simulations. See tutorials and reports from the field.

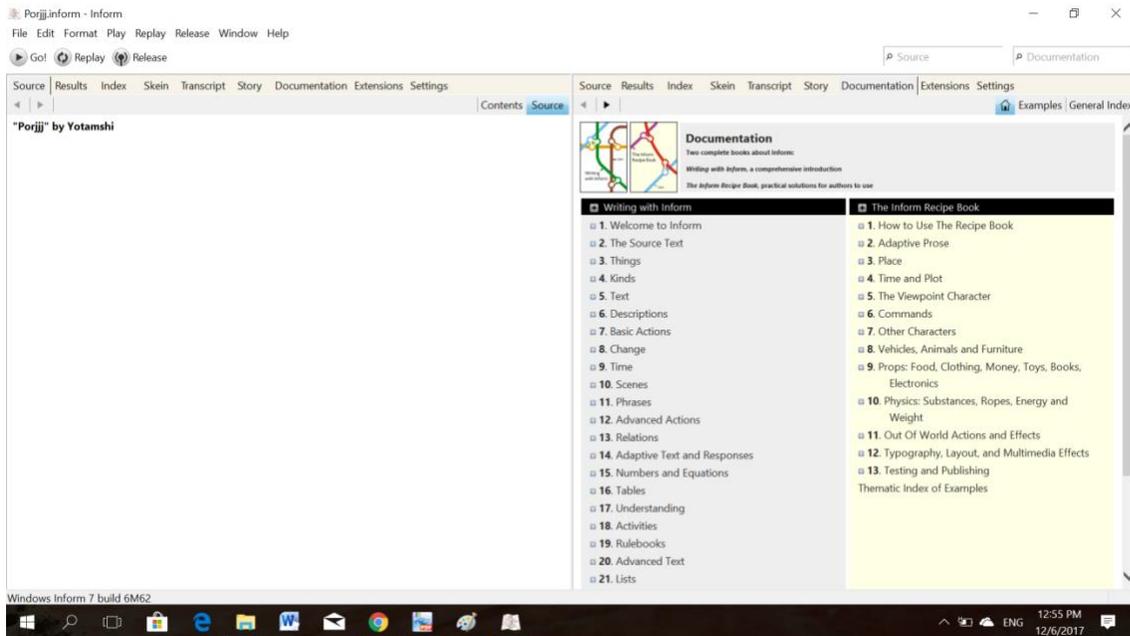
Community Support

A large and varied community of users write with Inform, which means that technical support and guidance is always available.

Accessibility

Inform is widely used with screen-readers and other tools serving the visually-impaired

- New open bug-tracker
- Now includes a library of downloadable extensions



- Website includes sections on IF history
- A pretty promising extensions section, though some categories they thought could be developed in are still empty

<https://textfyre.itch.io/jack-toresal-and-the-secret-letter>

86. Vorples

<https://vorples-if.com/>

Enhance interactive stories with Vorple

Vorple is an award-winning user interface library for parser interactive fiction development systems Inform 6 and Inform 7.

Seems quite promising in the Parser field. Originally developed for Undum, seems like they adapted into Inform when Undum mysteriously disappeared,

<https://vorple-if.com/vorple/doc/undum/enhancing-with-vorple.html>

“Vorple is a user interface library for interactive literature. Its goal is to let online hypertext fiction and parser interactive fiction systems break out of their sandboxes and let story authors use the full scale of the vast possibilities of technologies that are commonly used in the World Wide Web.

An author might use Vorple just to theme their story with one of the provided custom themes, or make a multimedia spectacle with pictures, video, sound effects and interactive elements, or anything in between.

A web developer might ask if we really need Yet Another JavaScript Library. There are many general-purpose libraries, like jQuery which Vorple uses extensively, but there are none made specifically for this purpose. Libraries for "normal" web sites work usually by modifying the page elements directly, which is the best choice when you are building on top of an existing structure, but interactive fiction is different in that the content is continuously being pushed from an engine that runs the story.

The project's headquarters are at www.vorple-if.com where you'll find all the official material and downloads. JavaScript developers who want to dig into the innards of the system can find the source code at GitHub.

The library and all official material are open source and free for anyone to use for any purpose.”

87. Playfic

<http://playfic.com/>

Essentially a web domain that functions as both a publishing platform and an authoring environment for “open language adventure games” (aka classic Parser), based on potring Inform7.

“Welcome to Playfic, the online community that lets you write, remix, share, and play interactive text-based games with the world.”

“Playfic is a platform for writing and playing interactive fiction. Interactive fiction (aka "text adventures") is a genre of game that uses no graphics or sound, but instead, uses text to tell a story in an interactive world.

Playfic is a way to write interactive fiction and publish it entirely on the web. Playfic uses a "natural language" programming language called Inform 7 that's easy to pick up and difficult to master. You're able to make your first simple game within minutes.

The best part? Playfic runs from your browser, so there's no need to download any programs to use it. You can write a game and publish, instantly creating a clean URL that you can send to your friends. What are you waiting for? Go explore!”

<http://www.ifpress.org/>

IF press – web-publication platform for inform7 stories, integrating the Glulx and FireVM virtual machines\interpreters, alongside typescript (javascript plugin).

88.INSTEAD (interpreter for simple text adventures)

<http://instead.syscall.ru/about/>

Russian adventure-game interpreter + authoring tool by Peter Koysk, launched 2016.

“INSTEAD was designed to interpret the games that are the mix of visual novels, text quests and classical 90'ss quests.

Features of INSTEAD:

high portable (Unix, Windows, Android, OS X ...);

easy game developing (Lua for game scripts);

oldschool;

By the way, INSTEAD is currently used not only for adventure games...

Wiki - <https://instead.syscall.ru/wiki/en/start>

“Features

Simple Lua-Based Game Development Language

Cross-Platform Portability

Combination SDL-Based GUI/Text Interface

Support for Rich, Interactive Visuals and Sound

Support for Custom Interface Themes

Support for URQ Engine Games”

Expansions\plugins forum on infiction: <https://www.intfiction.org/forum/viewforum.php?f=45>

General Inform development forum on Infiction: <https://www.intfiction.org/forum/viewforum.php?f=7>

89. Quest

<http://textadventures.co.uk/>

by TextAdventures

Textadventures.co.uk is a community of interactive fiction game makers and players.

All games here are either playable in your web browser, or as an app for your smartphone or tablet. Almost all are free, and you can even make your own, using our free software - Quest or Squiffy.

Quest

<http://textadventures.co.uk/quest>

Tutorial video (80000+ views): <https://www.youtube.com/watch?v=7vli0U4rSX4>

Quest lets you make interactive story games. Text adventure games like Zork and The Hitchhiker's Guide to the Galaxy. Gamebooks like the Choose Your Own Adventure and Fighting Fantasy books. You don't need to know how to program. All you need is a story to tell. Your game can be played anywhere. In a web browser, downloaded to a PC, or turned into an app. Get started now for free, or find out more below.

Launched in 2013 and apparently alive-ish. Doesn't strike me as very unique, but worth another look.

It's free...

Quest is free to use. You can use it free via your web browser, or if you're a Windows user, you can download the free desktop version.

And as open source software, Quest will always remain free.

...and you're free

No restrictions. Quest is licenced under the MIT License.

This means you can download and modify the Quest source code, and do whatever you want with it.

You can sell the games you make with Quest. You can use the Quest source code inside closed source commercial applications.

You don't need to ask for permission - you already have it.

Get started quickly

You don't need to know how to program to use Quest. But you might pick up some handy programming knowledge along the way.

Everything about your game is displayed in plain English, but the source code to your game is also viewable and editable for the more technically minded.

A full tutorial is included, and help is always available on the forums.

Ever wanted to...

Ever wanted to create your own game, but were put off by complicated programming languages? Quest is a great way to get started.

Want to get into game writing, or prototype game narrative before turning it into something bigger? Quest is a quick way to experiment with interactive stories.

Surprisingly powerful

Quest is a powerful game platform. Although designed to be easy to learn, it has huge power when you need it.

There is a fully featured scripting language behind the scenes, which you can dip in and out of as required. You can use variables and functions, and encapsulate functionality using object types to share scripts between objects. You can create and share libraries of advanced functionality.

Graphics, sounds and video

Who says text adventures are all about text?

You can add pictures to your game, music and sound effects.

You can even embed video, from YouTube and Vimeo.

And you can go even further, by customising the user interface using HTML and Javascript, to get your game looking exactly how you want it.

Any language

Create games in English, French, German, Spanish, Dutch, Italian, Portuguese, Romanian, even Esperanto.

Or create your own translation.

Share with the world

Who wants to play a text adventure game? People who search for text adventures.

This website is the top destination for text adventures on the web, so if you publish your game here, people will find it. So it's easy to share your game with the whole world, or you can make your game private and just share it with friends instead.

There's no need for players to download any software - people can play your game directly in their browser, whatever device they're using.

Intro youtube video: <https://www.youtube.com/watch?v=7vli0U4rSX4>

90.Salet

<https://salet.su/en/start>

Brand new IF tool.

“A general client-side framework for cybertext interactive fiction games.

The engine is capable of implicit choice, rule-based module game design, quality-based narratives. You have full control over the UI.

The Salet code is distributed under the MIT license. This permits you to modify and use them, even for commercial use.”

91.Storycentric

<http://www.storycentricworlds.com/index.html>

By UniMatrix Productions

Launched in 2016, Storycentric Worlds is a revolutionary milestone in interactive fiction games.

For players, Storycentric Worlds offers a multitude of quality text adventures, all available on a variety of platforms, including PC, iOS, and Android.

For developers, Storycentric Worlds provides a fast and easy way to create new and exciting for-profit games without the hassles of marketing or distribution.

Sign up to our newsletter for regular updates, and don't forget to visit our blog, which features new content every week!

FAQ - <http://www.storycentricworlds.com/faq.html>

Youtube trailer - <https://www.youtube.com/watch?v=VGiXEazlmZ0>

Unclear what the actual tool is, but they're new (though the design doesn't show it) and presumptuous, which is something in the context of contemporary IF.

92.StoryNexus

<http://www.storynexus.com/s>

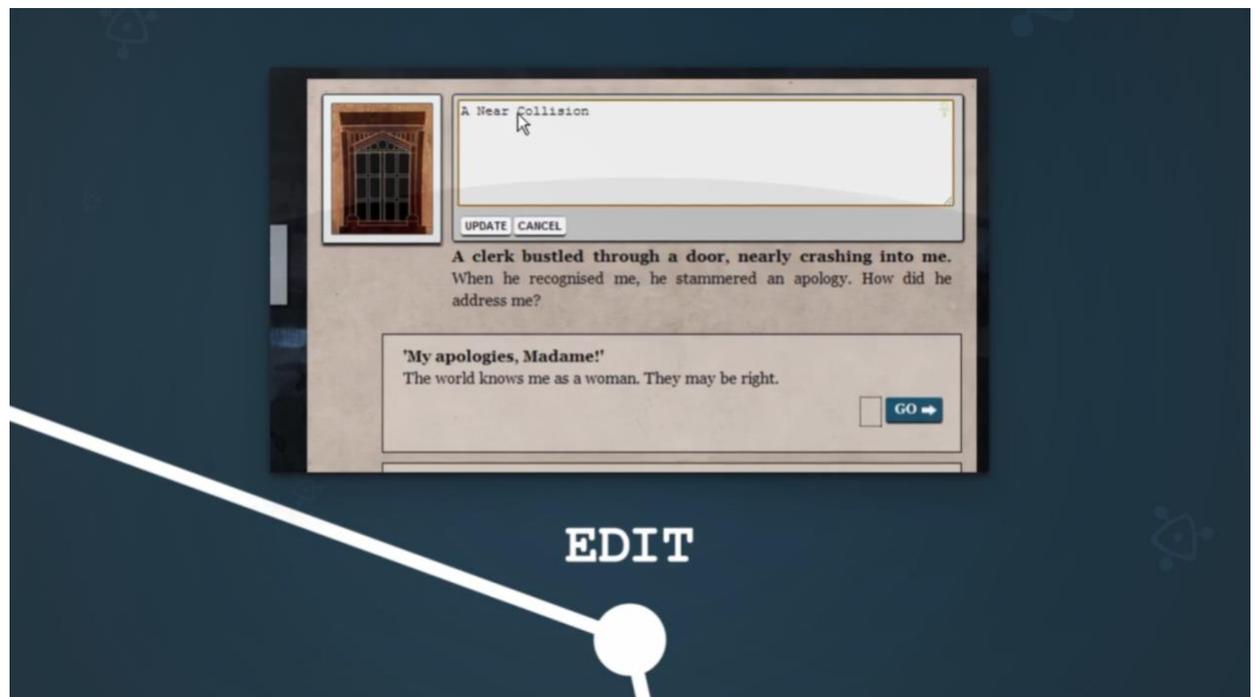
By FailBetterGames. Launched in 2012, turning the software they used to create Fallen London into an open, though moderated, browser-based authoring tool. Creators need a free account and do all the work in the browser.

"LIVE A STORY! CHOOSE YOUR DESTINY IN HUNDREDS OF INTERACTIVE WORLDS, ALL FOR FREE"

UI seems a bit dated, but is both a publishing environment and a thought-out tool for highly gamified hypertext

<http://www.storynexus.com/sd>

'World' index. Each new game\story created by a user is treated as an expandable 'world', listed here by category alongside number of storylets.



<https://vimeo.com/51452782#at=0>

Trailer

<http://wiki.failbettergames.com/>

Wiki

<http://community.failbettergames.com/forum17-storynexus.aspx>

Forum – still active

https://docs.google.com/document/d/1DENScniIsu2DgkGKyT_3nxMI5PKDLbWCst3JBp8tlco/edit

Quickstart guide. “storylets model choices, and qualities model consequences.”

<https://docs.google.com/document/d/1K1wnNJoBhxr17fe3kHQTnpvWLDyxeKWZBKivDQHsdJg/edit>

Reference guide – interesting ontology divided into ‘worlds’, ‘qualities’ (many sub-divisions), ‘decks and cards’, ‘storylets’, and ‘social acts’.

Failbettergames maintain editorial power over all games created, and reserve the right to take away a creator’s license to use their program at any time.

<https://docs.google.com/document/d/1dQgrxsUHC09AiHyHkZYwLwqEfEt9pJlYpfq3zqQbygc/edit>

Terms of service.

<https://docs.google.com/document/d/1YIYZBnr8iruAsWlruQZqACr6RtKIO5eUtYHV0TC2UHA/edit>

Interesting attempt at user-guidelines, as the company proclaims to inspect and potentially censor all games developed with the tool. For example, “12. You can extend the StoryNexus CSS stylesheets to customise the appearance of your world - but you mustn’t customise it in such a way as to remove or disguise any StoryNexus-specific elements (particularly the promotion bar at the top or the footer links).”

<http://fallenlondon.storynexus.com/Gap/Load?content=%2fStorylet%2fln>

Play Fallen London

Black Crown – story built with StoryNexus

<http://9fe.r.mailjet.com/2421.html?a=3BEQww>

<https://www.theguardian.com/technology/gamesblog/2012/dec/07/storynexus-create-interactive-adventures>

TheGuardian article

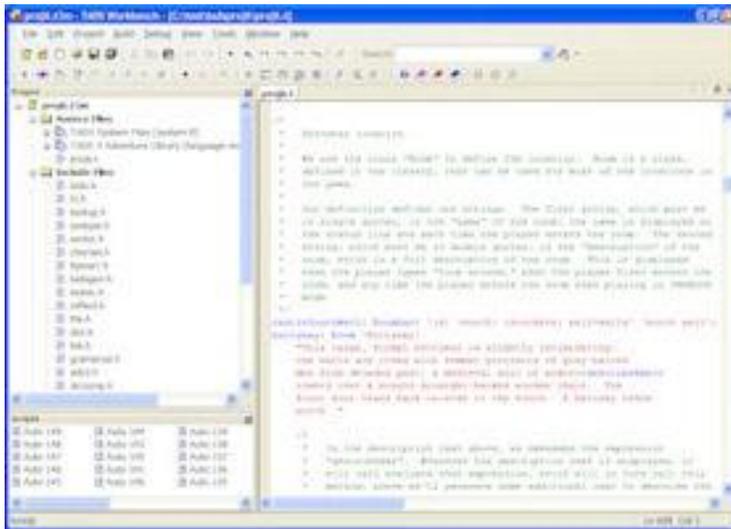
93.TADS

<http://www.tads.org/>

TADS was originally released in 1987 and was quite historically important. TADS 3, the latest version, was released in 2006. Seems quite dated, but IFwiki lists both TADS 2 and TADS 3 as two of the most commonly used IF tools (circa 2008). By Michael Jay-Roberts. TDS 3.1 released December 2011 and “adds web-based play, collaborative play, dynamic compilation”.

http://tads.org/ov_tads31.htm

“TADS is a free authoring system for writing your own Interactive Fiction. It offers a complete set of programming tools for creating high-quality IF.”



TADS Workbench, the integrated TADS authoring environment for Windows

“TADS is the programmer's power tool for IF authoring. It offers a robust and modern language that'll be instantly familiar to anyone who knows Javascript or C++, and a full-featured suite of development tools from text editing to debugging.

Games written with TADS can include graphics, animations, sound effects, fancy text formatting, and other multimedia features, using versatile and familiar HTML syntax that neatly integrates graphics with text”.

IF pages:

<http://www.ifwiki.org/index.php/TADS>

http://www.ifwiki.org/index.php/TADS_3

94.Tale

<http://tale.readthedocs.io/en/latest/>

“It is a library for building Interactive Fiction, mudlibs and muds in Python.

It is some sort of cross-breed between LPMud, CircleMud/DikuMud, and Infocom™ Z-machine.

Tale requires Python 3.5 or newer. (If you have an older version of Python, stick to Tale 2.8 or older, which still supports Python 2.7 as well)

You can run Tale in console mode, where it is a pure text interface running in your console window. But you can also run Tale in a simple GUI application (built with Tkinter) or in your web browser.”

“The Tale game driver launches in Interactive Fiction mode by default.

To run a story (or world, rather) in multi-user MUD mode, use the `--mode mud` command line switch. A whole lot of new commands and features are enabled when you do this (amongst others: message-of-the-day support and the ‘stats’ command). Running a IF story in MUD mode may cause some problems. Therefore you can specify in the story config what game modes your story supports.”

Tale is copyright © **Irmen de Jong**

Github: <https://github.com/irmen/Tale>

95.TextureWriter

<https://texturewriter.com/>

Intuitive, beginner-friendly hypertext tool. Also referenced by Alex Mitchell, seems quite unique and interesting in its UI and drag-and-drop function.

“We are Juhana (**Leinonen**) and Jim (**Munroe**), two interactive fiction creators who were intrigued by the possibility space between Inform and Twine.

Over the past few years we’ve been iterating on a new authoring tool called Texture.

Easy to play: We created a word-on-word interaction mechanic suitable for touchscreen phones and tablets, as well as web browsers.

Easy to create: Our WYSIWYG editor makes composition and design a right-brained, no code affair — right in the browser.

Easy to share: Click a button to publish and publicly share your work on social media. Or download an .html file to host it yourself or share via email.”



<https://killscreen.com/articles/texturewriter-might-best-interactive-fiction-beginners/>

“Joining other IF (interactive fiction) tools like Twine and Inform, TextureWriter offers a different and more intuitive way to navigate through a story. Like Twine and Inform, TextureWriter doesn’t require any coding knowledge to create a story. But it also incorporates a much more user-friendly interface than the others, using a simple click and drag button prompt called an “interaction word. [...]

Usually, to progress or make decisions in the story, these programs highlight and hyperlink words that bring users to a new browser page. But in TextureWriter, you drag the interaction button over the highlighted word of your choice so the rest of the story materializes underneath it on the same page. This changes the user experience, making it more active and intuitive by replacing clicking with dragging and dropping. Being able to use your finger to drag and drop “action words” onto the desired phrase will be useful in terms of accessibility for the player, especially since it allows them to read stories on touchscreen devices as well as the usual web browser.”

<https://www.rockpapershotgun.com/2016/08/24/if-only-stories-with-texture/>

Overview article by Emily Short

Infiction forum discussion:

<https://www.intfiction.org/forum/viewtopic.php?f=16&t=17026>

Joshua's blogpost announcing the tool:

<http://nitku.net/blog/2014/11/introducing-texture/>

96.Varytale

<https://varytale.com/>

Alive, seems like a more-commercial oriented version of Twine mostly.

One of Emily Short's main tools of choice, apparently:

<https://emshort.blog/2012/06/10/writing-for-varytale/>

Varytale is a platform for interactive stories. It's put together by Ian Millington, the same person who created the Undum tool, but Varytale goes quite a bit further.

showcased and attractively presented online; the capacity (eventually) to use one of several payment schemes to charge for content; and feedback and statistics tools that allow the author to collect ratings and comments on content, and to see which story choices are especially popular or unpopular. These tools require vastly less coding than traditional interactive fiction, but they do allow for world state and player stats-tracking. (Some time back, I described why CYOA without world state is a bit too restrictive for most of what I want to write.)

The Varytale writing tool lets you use either a raw-text editor with basic markup of nodes, or a smart wizard mode that helps avoid mistakes. In addition to the player-choice branching and rejoining you might expect, Varytale allows branching that depends on statistics within the narrative, or random selection from a set of different outcomes. Thanks to these variations, it's possible to do pretty complicated things, from inserting a piece of explanatory text that introduces a new character only if you haven't met him before, to having a game of chance whose win and loss outcomes are randomized.

Some of Varytale's features also exist in other forms: Choice of Games, for instance, offers a language, ChoiceScript, for scripting multiple-choice stories, as well as the facility to publish these to mobile readers and for contributing authors to collect something for their work. Twine provides a visual way to construct a CYOA that can be exported as a web-page and played via the web — or archived and emailed, or whatever else you might do with a collection of HTML pages. Inklewriter is a just-announced tool for building branching-and-rejoining stories that

requires essentially no coding ability and produces visually attractive output that can be read in a browser.

The key structural distinction in Varytale is the use of storylets. A lot of existing CYOA systems have a series of nodes, and at each node the player can choose to go to one of a small number of chosen points next. ChoiceScript, Inklewriter, and pretty much every CYOA book ever written work this way. Varytale storylets internally work this way as well — they're structured as shown above, trees with jumps and rejoins. Most of the storylets in Bee are considerably less complex than the one pictured above.

On the bigger scale, though, Varytale works on the Fallen London/Echo Bazaar/quality-based narrative system instead. (I anticipate that Failbetter's new StoryNexus platform will also do this when it becomes available.)

Each time you go to the contents page of Bee, you get three storylets chosen from the total storylet pool according to a set of rules:

— is this storylet available currently? Many storylets can be locked by having the wrong “qualities”, or stats — which is where the term “quality-based narrative” comes from.

— what is this storylet's priority and frequency relative to the other storylets available?

[...]A big appeal of storylets is that they allow me to introduce a reliable, rule-based structure to my story, something that helps the reader understand where it's all going. CYOA can be extremely shambolic. As a reader, you don't necessarily know how far you are from the end of a story. Single decisions can cause drastic divergences in the plot-line. The results of choices aren't always well-signaled. These features mean that the player often feels stripped of agency and a bit at sea. Having story components that do conform to rules — visible stats, storylets that turn up at predictable times, storylets you can revisit with new stats, etc — hands the reader an increased level of control and makes it easier for her to anticipate what it means to make a choice.

Outstanding Challenges

There are still some challenges about using the Varytale system, though it's evolved tremendously over the course of beta. **One of the biggest authorial challenges is that, while there's the awesome structure tool shown above for looking at branching structure inside a storylet, it can be considerably more challenging to get a view of what's going on at the macro level.** And I'm not even sure what the tool for this ought to look like. The strength of storylets is that they can affect which other ones pop up in a fairly freeform way, and one can affect another (via their shared stat use) without explicit logic in either.

But that's also what makes it really hard to graph how they will act. Most of the bugs that arose in Bee were related to this issue of envisioning the total structure of the work and detecting storylets that were going to break that structure. For instance, I had one bug where I mistyped a storylet's quality effects to advance the month by 2 instead of 1. Now suddenly it was occasionally possible, if the player got the storylet in exactly the wrong part of the narrative, to skip over the year-end competition entirely and wind up in a sort of no-man's-land, stuck in the thirteenth month of the year where there was nothing to do.

So there are still things to do here, though I don't have any easy answers about how to build a tool that will do them.

Theological Question

Since someone asked me this on another thread: I don't see Varytale, or any other choice- or storylet-based tool, replacing tools for parser-based IF. They're different tools for different jobs, and I really don't think there's one true ideal tool for delivering interactive narrative. But I can say that I enjoyed writing with Varytale's toolset and that it allowed me to do some things that I had been frustrated in trying to do with other CYOA-oriented tools in the past. Possibly other authors will feel that way as well.

97.XVAN Text Adventure Authoring System

<https://www.dropbox.com/sh/5xhdw2gcuntysic/AACpTE528SGxFgw5azp6NcERa?dl=0>

New developing project Marnix, a Dutch independent developer. Currently on version 2.3.2.

Infiction discussion thread - <https://www.intfiction.org/forum/viewtopic.php?f=16&t=22014&start=20>

Receiving enthusiastic responses on the forum, carefully documented and potentially a good case-study to analyze the tool creation process.

98.ZILF

<https://bitbucket.org/jmcgrew/zilf/overview>

New project by Jesse McGrew, essentially porting the ZIL language historically used by Infocom to create their classic text adventures.

"It's a set of tools for working with the ZIL interactive fiction language, including a compiler, assembler, disassembler, and game library.

Who do I talk to?

The primary contact is Jesse McGrew (a.k.a. vaporware), who may be found on the IntFic forum, IntFiction forum, or ifMUD.”

Infiction discussion: <https://www.intfiction.org/forum/viewtopic.php?f=16&t=21593>

Dead

MOE

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Moe>

IRIS project. Technologically gifted users essentially prioritize and condition a list of variables, and the program then uses these values to assess which way a plot should go. The user choice is listed as a “limitation” (perhaps IRIS was heavily tilted towards authoring systems\procedural story generation), but it actually makes it closer to an authoring tool than anything else on the IRIS list.

“Technical Description

Moe is based on the principle of plot points: a list of important moments (plot points) in the story are identified. They are organized according to a partial order: some plot points must occur only when another plot points has already occurred.

Such a partial ordering does produce a large quantity of possible sequences. In order to filter out uninteresting moves, an evaluation function is proposed, which rates a scenario according to some criteria. Seven criteria are used:

Thought Flow: logical relation between one event in the User's experience and the next one

Activity Flow: how bored the User feels

Options: perceived freedom

Motivation: User's actions motivated by her goals

Momentum: Proximity of certain events that should preferentially happen together

Intensity: Increases the User's excitement

Manipulation: how manipulated the User feels

Based on this rating, a search algorithm is applied, to select the best move at a given moment in the story.

Result Description (end user perspective)

Initially, Moe was not to be fully implemented: only the evaluation function and the search algorithms were implemented. **The target application is a text-based environment, where the user types free text which is interpreted into commands.**

Recently, Moe's approach has been implemented in a research 2D adventure game (Sullivan et al. 2008).

Authoring Description

In Moe, **the aesthetics of a given author are provided by the evaluation function.** Since Tea for Three, the story used to test the approach, was written by Peter Weyhrauch himself, the designer of the whole system, it is difficult to assess the accessibility of the approach for less technical authors.

Limitations

Plot points in Moe are fragments that are pre-written by the author. It limits the degree of agency of the system.

Main Publications

Weyhrauch, P. (1997). Guiding Interactive Drama. Ph.D. Dissertation, Tech report CMU-CS-97-109, Carnegie Mellon University.

Sullivan, A., Chen, S., Mateas, M. (2008). Integrating Drama Management into an Adventure Game. Proceedings of the Fourth Artificial Intelligence and Interactive Digital Entertainment Conference, October 22-24, 2008, Stanford, California, USA 2008.

Storytron\SWAT

<http://www.storytron.com/>

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Storytron>

IRIS project, though they seem to have taken in something developed outside of academia. Storytron was the general procedural\modeling system, SWAT was the authoring tool part. Very much dead and never seems to have really caught on. Still, very interesting concept of creating a simplified, procedural version of English for authors to write the story 'code' in proto-natural-language.

"The Storytron system is character based and contains the following components:

Storyteller - plays the storyworlds

Deikto - a simplified version of the english language used by the player

SWAT - the Storyworld Authoring Tool to create and edit storyworlds, it contains editors for Verbs, Actors, Stages, Props, Relationships and Operators

Sappho - a scripting language used by the author

The stories have to be created with SWAT, which can be done offline. But to play them you have to be online to connect to the server.

The central concept of Storytron is the definition of actions which are called verbs. With the verb as the core element, a sentence is created around it by adding other word sockets like actors, props, stages and more. The result is a simplified version of the english language, called Deikto. By adding suffixes to the word sockets Deikto sounds more natural.

A story is defined as a sequence of events that always include a verb. When the story engine has to execute an event, each actor receives a set of reactions to that verb, the set is called role, a single reaction is called option. To assume a role, the actor has to meet its conditions. An option is another verb with the specification of rules to fill the word sockets of the corresponding sentence and inclinations

to perform that action.

| Visible? | Suffix |
|-------------------------------------|-----------|
| <input checked="" type="checkbox"/> | Subject |
| <input checked="" type="checkbox"/> | Verb |
| <input checked="" type="checkbox"/> | DirObject |
| <input checked="" type="checkbox"/> | 4Actor |
| <input checked="" type="checkbox"/> | 5Actor |
| <input checked="" type="checkbox"/> | 6Verb |
| <input checked="" type="checkbox"/> | 7Prop |
| <input checked="" type="checkbox"/> | 8Actor |
| <input checked="" type="checkbox"/> | 9Actor |
| <input checked="" type="checkbox"/> | 10Verb |
| <input checked="" type="checkbox"/> | 11Prop |
| <input type="checkbox"/> | 12Verb |
| <input type="checkbox"/> | 13Actor |
| <input type="checkbox"/> | 14Actor |
| <input type="checkbox"/> | 15Prop |

Sample sentence for the left panel / right panel :

USA I offer a deal to China in which China he agree to ask Afghanistan Afghanistan

vote for sanctions not to Afghanistan: hand over bin Laden hand over bin Laden in return for which

USA I agrees to ask EU EU MeetingAlarm not to

Afghanistan: hand over bin Laden hand over bin Laden MeetingAlarm USA

USA Afghanistan: hand over bin Laden hand over bin Laden

All computations, e.g. for conditions and inclinations, are done with Sappho, a graphical scripting language that structures the script in a tree-like manner.”

Plans for the future\what went wrong page: <http://www.storytron.com/PlansForFuture.html>

(Short version: too much complexity)

SUDS

A once-very-popular Parser engine that stagnated for a while and recently died.

Infiction discussions on its death: <https://www.intfiction.org/forum/viewtopic.php?f=16&t=1104>

<https://www.intfiction.org/forum/viewtopic.php?f=16&t=22015&start=10>

Undum

<http://undum.com/>

Essentially a highly mutable code-based IF tool for creators with Javascript and HTML knowledge. The URL seems to have changed to some sort of German esport portal. Github project still up - <https://github.com/idmillington/undum> - but has not been updated in 2 years. Seems like a promising tool that may have mysteriously died.

From IFwiki: "Undum (undum.com) is an authoring system for CYOA-style stories playable on web browsers. Undum describes itself as "a client side framework for hypertext interactive fiction games". Undum was created by I.D. Millington in 2010. It was nominated for Best Technological Development at the XYZZY Awards 2010."

Form github page(s): "**Undum is a game framework for building a sophisticated form of hypertext interactive fiction.**

If that means nothing to you, then let's go back a few steps. Remember those Choose Your Own Adventure, or Fighting Fantasy books? Where you got to choose what your character does next? Well if you think of that in a web-page you have hypertext interactive fiction, or HIF. Instead of turning to a particular page, you click a link, and the next bit of content appears.

[...]

Undum allows you to make the output dynamic. It allows you to keep track of what has happened to the character (any kinds of data, in fact), and to then change the text that gets output accordingly. Effectively it is like writing a CYOA page that is different each time you read it. This allows for far richer and more rewarding game design.

Undum is a pure client client-side library. It consists of a HTML file and three Javascript files. The HTML file uses a nice bit of styling, so there's a bunch of CSS and images in the default package too, but that can be replaced if you want. **To create your own game, you edit the**

HTML file a little (mainly just changing the title and author), and edit one of the Javascript files.

Because the game is written in Javascript, you get the full power of a dynamic and efficient programming language. **This isn't a CYOA scripting system with limited functionality. You can take control of anything you want. Or you can just keep things simple using a bunch of simple functions provided by Undum."**

IF created with Undum: The Matter of the Monster, by Andrew Plotkin
<http://eblong.com/zarf/zweb/matter/>

Another, older, github page with modifications by Andrew Plotkin:
<https://github.com/erkyrath/undum>

Raconteur (extension-tool for Undum, not to be confused with the defunct Racontre or the video tool RacontR)

<http://sequitur.github.io/raconteur/>

<http://brunodias.space/2015/04/15/raconteur-tutorial-1/>

"Raconteur is Undum with batteries included.

Undum is perhaps the most versatile system for writing hypertext interactive fiction.

Unfortunately, it's also the hardest to use. Raconteur aims to change that. It's designed so that you only need to care about the complexity that you're going to use, when you're going to use it."

<http://raconteur.readthedocs.io/en/latest/philosophy/>

Last updated September, 2015.

Design Philosophy

Raconteur is designed with the following principles in mind:

Code should disappear when it doesn't matter

Unlike Twine, which enforces a clear separation between code and content, in an Undum story your code and content will be blended together in one file.

This is powerful: Instead of relying on macros, you always have the full power of a real programming language and its APIs to use anywhere. But it can also lead to a lot of boilerplate.

Raconteur's API is designed so that you can just write content. The DSL-like approach makes Raconteur source code written in CoffeeScript look like Tweep or ChoiceScript files:

```
situation 'west-of-house',
  content: """"
  You are standing in an open field west of a [house], with a boarded up
  front door. A [forest] is to the west.
  """"
```

Markdown is used throughout so that your prose doesn't get lost in html. As much as possible, we try to follow the lead of systems that have been built previously to produce adaptive text or functionality in interactive fiction, such as commonly-used Twine macros and Inform 7's adaptive text functionality.

Interfaces should start simple and become complex as necessary

Undum provides two prototypes for situations: Situation, a barebones prototype that only implements those methods which Undum expects internally; and SimpleSituation, a simplified version of that which serves the purposes of situations with some static text and a few choices.

Raconteur provides a single prototype, RaconteurSituation, which is designed to scale up as situations become more complex. Changing a situation from one with static text to one with dynamic text is easy:

```
situation 'west-of-house',
  content: () -> """"
  You are standing in an open field west of a [house], with a boarded up
  front door. A [forest] is to the west.

  #{getRoomContents(this)}
  """"
```

Adding more functionality to a situation is strictly a matter of adding more properties to the situation's spec. Most writing is rewriting; Raconteur aims to make rewriting as straightforward as possible.

Shortlist of further IF tools

These tools are either in early development, mostly dead, never got of the ground, or not that interesting.

HyperLink

AdventurePrompt

Interactive co-authoring environment of IDN, interesting concept but seems to be still in development (announced 2016) and not moving much.

<https://github.com/felixplesoianu/advprompt>

Adventure Prompt is a system for authoring interactive fiction interactively, the same way online building works in a [MUSH](#) or [MUCK](#). Walking simulators, treasure hunts or even room escape games can be created without any scripting, unless you count the command language itself.

Blink

<http://bloomengine.com/blink/>

A javascript engine for creating hyperlink-based interactive fiction.

Dedalus

<https://github.com/pistacchio/Dedalus>

A system based on Javascript and HTML to generate and run Choose Your Own Adventure narrative

Infiction thread - <https://www.intfiction.org/forum/viewtopic.php?f=16&t=8358&start=10>

Elm Narrative Engine

<http://package.elm-lang.org/packages/jschomay/elm-narrative-engine/latest>

“A unique tool for telling interactive stories.

Features

Context-based rule-matching system for immersive and responsive stories

Extremely flexible and extensible, see the sample stories below for examples!

Total separation of logic, presentation, and content

Data-driven and declarative

Designed to work with the Entity Component System pattern

Possible to integrate with other tools including visual editors and other game frameworks

Sample Stories

Play sample stories made with the Elm Narrative Engine

Getting Started

The Elm Narrative Engine is written in the Elm language, and is intended to be embedded in an Elm client app. If you are a developer, this allows for great customization.”

<https://github.com/jschomay/elm-interactive-story-starter/tree/2.0.0>

Infiction thread after release of V2 In 2016:

<https://www.intfiction.org/forum/viewtopic.php?f=16&t=20756&start=10>

Massively

<http://author.getmassively.com/#/templates>

Heavily templated chatbot authoring tool for IF like messenger bots on popular apps.

Textalion

<http://anamnese.online.fr/site2/textallion/docs/presentation.html>

An easy-to-use tool for publishing prose, literature, poetry in html, pdf or epub, and using txt2tags as a back end.

<http://anamnese.online.fr/site2/index.php?page=textallion>

Similar to Twee, functions to utilize HTML logic for IDN tool interface. French tool that seems to have lost the race with Twee (an interpreter and file format used in Twine) a similar idea.

Parser

NGpags\Superglus

<http://www.caad.es/superglus/doku.php>

<http://www.ngpaws.com/>

Two Spanish tools essentially porting the historical PAWS authoring language.

<https://www.intfiction.org/forum/viewtopic.php?f=16&t=16903&start=10>

Infiction thread on NGPAWS development

Gamefic

<https://github.com/castwide/gamefic>

A Ruby Interactive Fiction Framework

Gamefic is a system for developing and playing adventure games.

Infiction thread:

<https://www.intfiction.org/forum/viewtopic.php?f=16&t=12317&start=10>

Scotkitt

<http://www.rubydoc.info/github/MikeTaylor/scotkit>

<https://github.com/MikeTaylor/scotkit>

Interpreter for the historical Scott Adams format that doubles as a very niche authoring tool.

“This is a Ruby program to compile, decompile and run adventure games in Scott Adams format, including those created by the great man himself. ScottKit's good for nostalgia freaks wanting to relive the classic games of the 1980s, but also as a tool for creating small, concise, new games.

It was initially written as an exercise in Ruby rather than with any great expectation that it would be useful, but it turns out to work pretty well as a tight, clean environment for games programming: if Inform 7 is like the Ruby of adventure games, ScottKit is like C. For a big project, you definitely want Inform 7; but I've found that there is a distinctive appeal to ScottKit. Apart from anything else, it makes a good domain-specific "little language" for teaching my sons how to program.”

3 main IF lists:

https://docs.google.com/spreadsheets/d/1-B1yKlateTpwTdRNT9W_ZjDzC6XnFpHXrcZ4nr_x7LQ/edit#gid=0

http://www.ifwiki.org/index.php/Category:Authoring_system

Roger Firth's Cloak-of-Darkness: a list with some further old-school parser tools (circa 2011)

<http://www.firthworks.com/roger/cloak/>

"These are minority-interest systems which haven't yet found widespread acceptance or whose moment has passed. I wouldn't recommend them for IF beginners:

A-code

AAS

AGT - lisetd

Aiee!

IAGE

JACL

PAWS

SUDS

There are also a few curiosities available; I haven't tested them, there are no descriptive pages, and they're not guaranteed to be complete working implementations:

AGI (download)

AIFT

AWK

CAT (download)

LADS (download)

Scott Adams (download)"

All of the above seem either dead, dated, too complex and programmer-inclined to be interesting, or all 3. Could be worth another look though.

Contain quite a few more tools I'm not counting or even listing, but having looked through the majority of the ones I don't have here, they seem minor and fringe\dead\historical footnotes.

<https://github.com/yakiradixon/awesome-interactive-fiction#overviews>

B. Unique Sub-categories of authoring tools

B.I - Interactive video\documentary tools

***Add Unity and Unreal video plugins

1. Adventr

<http://www.adventr.tv/>

“Bring your videos to life

Adventr is the simple platform for creating and sharing interactive, web-native video experiences. Just drag & drop your clips to create seamless, personalized HD videos in which viewers can interact and choose their own paths - in real time. Share your adventrs on Adventr.tv, your website, video networks or social media - for free!”

2. Conducttr

<http://www.conducttr.com/>

Launched 2010. Yearly subscription of 500\$.

“As a pervasive entertainment platform, Conducttr is in a class of its own. It fuses many product types into a single cloud-based service: a content management system, an audience relationship manager and a storytelling & gaming engine.”

“Conducttr's mixed-reality platform allows you to develop and deploy immersive, scenario-based experiences faster and with fewer people.”

MIT Docubase description: “Conducttr is a cloud-based multi-platform storytelling tool that sits behind your website, site-specific installations, events and mobile apps and connects them all into an integrated user experience. It blends storytelling, game and marketing automation into a powerful toolkit – think “Lego for transmedia storytelling/activism.”

Conducttr’s collaborative experience design tool loads in any web browser and allows you to build projects that interact with your audience via social media, email, SMS, apps, real-world inputs like air quality, temperature, tides etc. and tons more.

If working with a web developer, use Conducttr as an exoskeleton to implement projects faster and cheaper than coding alone.”

<https://docubase.mit.edu/tools/conducttr/>

3. Creativist

<https://creativist.com/>

“Create a reading experience that engages your audience. Creativist empowers you to tell beautiful stories composed of text, images, video, maps, and more. You are not limited to a given format or platform. Produce a story, e-book, magazine, video narrative, stunning report - and publish it to the web, e-readers, the Creativist app, or your own app. Creativist takes you to the forefront of digital storytelling, so that you can focus on publishing what you want, how you want.”

“Tools and Apps for Journalists: Creativist”

<http://onmedia.dw-akademie.com/english/?p=17145>

“Creativist is a web-based storytelling platform developed by the media and software company The Atavist. Since 2009 The Atavist has used its Creativist platform to produce and publish original long form narrative stories for the iPad. Now available in open beta, Creativist offers tools for a variety of digital projects – from producing online books, magazines and video projects to even building your own app (as did the Paris Review and TED Books).

However, the most interesting feature of Creativist for journalists might be the possibility of creating online multimedia specials that make use of parallax-scrolling effects – or short Scrollitelling as Benjamin Hogue, co-founder of Djehouti (the company behind the storytelling software Racontr) likes to call it.”

4. CtrlEdit\CtrlMovie

<http://www.ctrlmovie.com/>

New tool for simplified branching-tree movie interface and editing. Created by CtrlMovie, a French company, who also developed an app for mobile interactive cinema viewing, released in 2016 alongside the launch of their first major film, *Late Shift*. Software is commissioned per-project, for either revenue sharing or a fixed cost in the case on project not meant for profit.



“CtrlMovie allows filmmakers to add:

Buttons during playback to allow the user to influence the story

Dynamic Jump Actions to flexibly jump between segments – at an exact timecode, in a time frame or triggered by user actions

Swipe Mode to allow users to look around in the film by panning the image with swipe gestures

Animated Masks to make objects in the film tappable

Variables to store user decisions, and retrieve them later for a delayed effect on the story

Expressions to evaluate the former actions of the user and to influence the storyline using short java scripts

Separate Multiple Audio Tracks, independent from the video segments and jump actions

Dynamic Overlays to display browser windows and other interactive elements on top of the movie during playback

Subtitles easily to support a wider audience.
Hoguet quotes co-founder Baptiste Planche:

“CtrlEdit is used once all video segments have been edited to incorporate them into an interactive whole. The solution costs nothing to purchase if we are able to set up a revenue sharing system with the producer. It goes without saying that the model is adaptable. For example, if the final project is not profitable, we can set a price for the software license. In all cases, we are very open to encouraging creators to make maximum use of our tool. The only aspect to which we pay attention is compliance with a certain level of quality regardless of the project. At present, we are receiving a lot of requests from creators and producers and some ten or so projects are underway—including two or three at an advanced stage.”

Interview with Baptiste Planche, lead developer

<http://www.benhoguet.com/discover-interactive-cinema-with-late-shift/>

“By nature and use, cinema is a linear media that excels at having us lose track of time and plunging us into increasingly complex stories. This is due in part to cinema’s extreme industrialization. Today’s cinema is the most highly normalized cultural experience around—maybe even more so than the book. The same dark movie theatres, the same seats, the same popcorn, the same image ratios, the same projection technology and the same social contract between moviegoers.

However, UFOs sometimes emerge on the fringe. Some propose film concerts in which the music is performed by an orchestra. Others such as Xavier Dolan shoot their films almost entirely using a square image ratio. And a few explorers who focus on new forms of storytelling go so far as to experiment with an even more subversive component, i.e., interactivity.

To get a greater number of creators interested in interactive cinema, what may have been missing was an integration tool that made it easier to produce films that branch out and give the public the power to decide.

That’s exactly what the production / tech company CtrlMovie proposes. The Swiss company produced the Late Shift interactive film in 2016 and developed CtrlEdit, an application that provides access to all of the technology needed to produce interactive cinema experiences and broadcast them in movie theatres as well as on the screens of mobile devices.”

<http://www.information.com/blog/2016/12/14/interactive-cinema-ctrlmovie-introduces-ctrledit/>

5. Explory

<https://www.explory.com/>

“WHAT'S YOUR STORY?”

Explory makes it easy to be a storyteller.

No need to keep it to 140 characters or 6 seconds —

you just tell the story you want to tell.”

i-Docs list:

“A free mobile-storytelling app that allows you to create engaging interactive stories in minutes. Easily combine photos, video, text, music and narration without the time and effort of video editing. A Kickstarter-funded project.”

From Submarine Channel’s post: In the late ’90s, Robert Tatsumi and Jonathan Gay created Futuresplash Animator, a vector-based animator editor that would later go on to become Flash. The pair were joined by Gary Grossman, Peter Santangeli and Peter Goldie, and together they made software history. Having created one of the world’s most famous pieces of software, the quintet teamed up again in to launch Explory, a Kickstarter-funded iOS storytelling App.

While not as visually attractive as Storehouse or Exposure, Explory is simple, well designed and makes turning photos and videos — (together with music, narration and text if desired) into compelling narratives. With Apps like Snapchat, Vine and Instagram Video on the rise, Explory offers a nice alternative that seeks to turn a variety of media into something longer and more engaging.”

Two more Submarine-Channel honorable mentions that seem pretty bland:

Steller - <https://steller.co/>

“Everyone has a story to tell.

Tell yours with photos, videos, and text.”

Pixotale - <http://pixotale.com/>

“Connecting people through visual storytelling”

Go To Web App

Amazon Storyteller – abandoned script-into-storyboard tool

<https://studios.amazon.com/help/amazon-storyteller>

6. Exposure

<https://exposure.co/>

From i-Docs list: “

Primarily aimed at photographers, Exposure allows you to create a blend of text narratives and photographs within a drag and drop framework. Works as a desktop app with a freemium publishing model.”

“Create beautiful photo narratives

Primarily aimed at photographers, Exposure is for photographers who are looking to publish their photographs as part of a more meaningful narrative. In many ways, Exposure is reminiscent of Storehouse but in a desktop format; just like Storehouse the emphasis is on eye-catching, big-impact photographs which drive the narrative. And like Storehouse, it’s also very pretty.

Exposure’s Post Editor works by allowing you to drag and drop photographs into your browsers and then add various texts in between the photos. The result is an attractive blend of text narratives and photographs that are almost reminiscent of Medium – the blog publishing platform launched by Twitter founder Ev Williams.”

<https://www.theverge.com/2013/12/6/5178624/exposure-creates-stunning-graphic-stories-out-of-your-photo-sets>

HackaStory Tools description: “Create photo narratives in a very easy way. Add photo’s and text to your story. Also really easy to embed in your website.”

7. FrameTail

<https://frametrail.org/>

FrameTrail is an open source software that let's you experience, manage and edit interactive video directly in your web browser. It enables you to hyperlink filmic contents, include additional multimedia documents (e.g. text overlays, images or interactive maps) and to add supplementing materials (annotations) at specific points.

The screenshot displays a video player interface for a live broadcast from the German Bundestag. The main video shows Heiko Maas, the Federal Minister of Justice and Consumer Protection, speaking at a podium. The video player includes a play button, a progress bar, and a sidebar with a profile for Heiko Maas. Below the video, there is a row of linked video fragments with titles and thumbnails.

| Fragment Title | Thumbnail |
|--|-------------|
| Facebook Gesetz gegen Hass verfassungswidrig (ZDF) | [Thumbnail] |
| Ulrich Kelber über das Netzwerkdurchsetzungsgesetz | [Thumbnail] |
| Republica: Kritik am Gesetz gegen Hatespeech (NDR) | [Thumbnail] |
| Europäische Bürgerrechtler kritisieren Netzwerkdurchsetzungsgesetz (netzpolitik.org) | [Thumbnail] |
| Späte Einsicht: SPD-Mann Fechner will das NetzDG ergänzen (netzpolitik.org) | [Thumbnail] |
| Konflikt im Bundestag: Baresiegel | [Thumbnail] |
| Deutschland hat die Ehe für alle itageleschaut | [Thumbnail] |
| Nicht einmal mehr die Simulation von Partipation (FAZ) | [Thumbnail] |
| Alexander Rabe - Netzwerkdurchsetzungsgesetz | [Thumbnail] |
| Bundestag stimmt für Gesetz gegen Hass (ZDF) | [Thumbnail] |
| Bund Netz geset | [Thumbnail] |

Features:

Timebased Documents

Use any video file or even an empty video with a defined length as a basis for synchronization.

Linked Video Fragments

Create non-linear networks of video fragments (Hypervideos) which can be freely navigated by the user.

Interactive Overlays

Place documents on top of the video (e.g. text, images, web pages or interactive maps) and decide how and when they should be displayed.

Multimedia Annotations

Add supplementing materials at certain points of time and compare those with the annotation timelines of other users.

8. Interlude Treehouse\EKO - <http://interlude.fm/en/> Renamed Eko - <https://helloeko.com/stories/>

Interactive music-video creation platform turned general interactive video company\platform. Website now features additional formats, such as “that moment when” interactive videos. Based in Tel-Aviv, founded by Yoni Bloch (ex-musician).

From i-docs list: “

“An online, interactive video authoring site with little software for the user to download a free for non-commercial use! Commercial uses are expected, and pricing for them is determined on a case-by-case basis. Simple to use for basic projects, recommend for interactive music videos.”

“If you’re familiar with the rise of interactive music videos, then there’s a good chance you may already have seen this storytelling tool in action. **The viral interactive music videos for last year’s Bob Dylan’s Like A Rolling Stone or Chairlift’s Met Before were both made with Interlude Treehouse.**

Founded by Yoni Bloch and Tal Zubalsky, the Tel Aviv-based Interlude is a digital media company that designs, develops and markets interactive video technology. Treehouse, is a web-based HTML5 web app they have developed that’s designed to allow anyone to tell their stories in the form of interactive video experiences.

One of Treehouse's boons is surely its ease-of-use; with its drag and drop interface, within a few hours users can create an interactive video experience that tells their story and allows users to explore the outcomes of different choices and decisions.

In fact, this year sees Interlude **team up with the Tribeca Film Festival by inviting filmmakers to re-imagine storytelling for the digital age by creating an interactive music film for Damon Albarn, Aloe Blacc or Ellie Goulding.**

If you want to find more about the Bob Dylan video – as produced with Treehouse – head on over on 2Pause!

<http://www.2pause.com/video/like-a-rolling-stone/>

9. Korsakow

<http://korsakow.com/>

Berlin-based tool for journalists\filmmakers. Very chaotic and problematic according to Hartmut.

Quote from the interactive video-making tools page:

“The Korsakow System (pronounced 'KOR-SA-KOV') is an easy-to-use computer program for the creation of database films. It was invented by Florian Thalhofer, a Berlin-based media artist. Korsakow Films are films with a twist: They are interactive - the viewer has influence on the K-Film. They are rule-based - the author decides on the rules by which the scenes relate to each other, but s/he does not create fixed paths. K-Films are generative - the order of the scenes is calculated while viewing. And, as Florian likes to say, Korsakow is not a religion.”

THE FUTURE OF STORY TELLING

You are here, because you have heard of Korsakow, a software to create interactive films for the web. But Korsakow is much more than that. Of korsakow!

KORSAKOW IS FOR VISIONARY JOURNALISTS, FILM MAKERS, ANTHROPOLOGISTS, ARTISTS.

If you are one of the above and you want to talk about things that don't fit the format of story, read on — Korsakow is for you! Korsakow is a visionary tool for new authors. Every medium, may it be film, text, photography or canvas, has its own inner logic. A logic, that defines the boundaries within which you can tell and think. Korsakow expands these boundaries.

KORSAKOW IS NOT A TOOL TO CREATE A STORY, IT IS A TOOL TO WEAVE A WEB OF STORIES.

Do you get the feeling that the world is getting too complex to make sense? Maybe it is not the world that does not make sense. Maybe the way we tell things, just doesn't get it. At Korsakow we believe that the mediums we use today, are not good enough any more, to capture the increasing complexity of the things that need to be told.

KORSAKOW IS A NEW TOOL

...well, not really new new, it has been around for a while – 16 years. Korsakow is used in academia, in research and education. The latest version – KORSAKOW 6 is beyond being a research tool, only.

KORSAKOW IS READY FOR YOU!

button - future Korsakow uses the logic of computers to help structuring narration. Compare it to how linear film uses the logic of a film reel to structure bits and pieces of narration. Film is very good in helping authors to structure their observations, findings and thoughts in a linear way. Linear, because this is how film stores data. One thing after the other, the first leads to the second, the second to the third and so on.

KORSAKOW IS DIFFERENT

When you access data, that is stored on a computer drive, you do not want to look or listen to one element after the other in a linear order (like when watching a film). On a computer everything stored can be accessed instantaneously. It is easy to combine things in new meaningful ways all the time. This logic of computers allows to find inspiring patterns in the things recorded and it gives freedom to the author by not forcing him or her to decide for one way to look at things, only. This power of recombining data in meaningful ways can be used for creating narrations as well.

KORSAKOW USES THE LOGIC OF COMPUTERS

You can use Korsakow to structure your narration. A story that then will not be fixed. A flexible narration that changes every time someone looks and listens to it. A story that is the same and different every time someone visits it. A story like person, a story like a place. The same and different everytime you visit.

Academic paper:

<https://link.springer.com/content/pdf/10.1057/9781137310491.pdf#page=163>

Soar, Matt. "Making (with) the Korsakow system: database documentaries as articulation and assemblage." *New Documentary Ecologies* (2014): 154-173.

10. Klynt

<http://www.klynt.net/>

“News Reports, Documentaries, E-learning or Experimental...
Explore the Power of Interactive Storytelling.



- Edit Rich Narratives
- Mixed Media Editing
- Texts, images, audios, videos and hyperlinks
- Multiple Interactive Layers
- Manage unlimited story nodes
- Visual Storyboard
- Edit your storyboard like a mind map
- Connect Your Story To The Web
- Mash-up Ready
- Mix Youtube videos, iframe any web content
- Social Networks Friendly
- Engage with Tumblr Facebook, Twitter, Google+, LinkedIn
- Custom Maps
- Geolocalize your content
- Publish Anywhere
- Quick Publishing
- Automatically export your final edit
- Embeddable Anywhere

Show your program on any webpage
Tablet Devices Compatible
Fully customizable HTML5 Player. Responsive. Open Source.

11. MeoGraph

<https://meograph.wordpress.com/page/2/>

Dead - official webpage is down, last update on the wordpress is about the 2012 elections.

“We aim to make it incredibly easy and fun for anyone to create beautiful interactive multimedia that you can easily share and embed.

Our first product pairs Google Earth/Maps with a timeline to resemble a video player. You can play back stories in context of where and when, plus link external content to each moment for a truly interactive experience. We hope it’s a great way for journalists to engage their readers, teachers to inspire their students, travelers to tell their tales of adventure, and anyone to share their life story with friends and family.

This fall we will release an app to let you meograph on the go. Later, we will start to offer other 3D models as platforms on which to tell stories, and eventually let you upload your own so Meograph can help you convey meaning on any type of object important to you.”

12. Metta

<http://www.metta.io/>

“Create engaging video lessons
Surprisingly simple video learning management

Keep Them Interested!

Digital learners expect rich, visual information experiences. It's hard to grab their attention with traditional techniques. Teach your groups using interactive video lessons and share all relevant media with Metta's easy-to-use platform.

Features

Multimedia storytelling combined with polls, quizzes & trackable assignments.
Videos with embedded questions
Group assignments — personalized statistics
YouTube videos as lessons

With Metta every member in a group can be a learner or a teacher. You can easily switch between learn and teach mode. When it's time for students to present their actual subject, they can start teaching you or their peers."

13. **Odyssey**

<http://cartodb.github.io/odyssey.js/>

"A simple way for journalists, designers, and creators to weave interactive stories

Odyssey.js is an open-source tool that allows you to combine maps, narratives, and other multimedia into a beautiful story. Creating new stories is simple, requiring nothing more than a modern web-browser and an idea. You enhance the narrative and multimedia of your stories using Actions (e.g. map movements, video and sound control, or the display of new content) that will let you tell your story in an exciting new way. Use our Templates to control the overall look and feel of your story in beautifully designed layouts."

1. PICK A TEMPLATE

Templates allow you to change the basic way your story will unfold. Designs include scrolling, slide based, and temporal based templates. You can also contribute your own.

2. CRAFT YOUR STORY

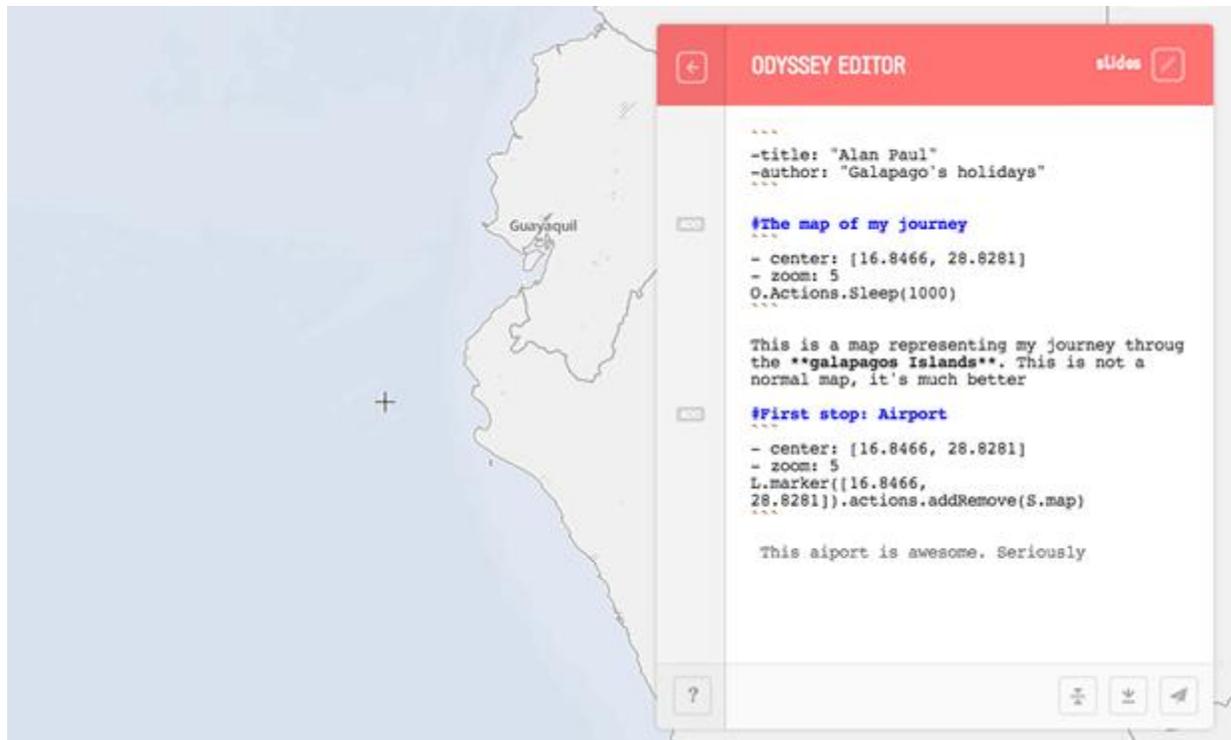
The Odyssey Sandbox gives you an easy way to test the Odyssey library and mix written narrative, multimedia, and map based interaction into a beautiful map driven story.

THE MAP

Preview exactly what your reader will see as they move through your story.

RECORD ACTIONS

Use the map to link pan and zoom actions to each stage of your story.



14. Pageflow

<https://pageflow.io/en/>

German project, By Deutsche Welle

“Pageflow is an open source software and publishing platform for Multimedia Storytelling, jointly developed with the West German Broadcasting Corporation „WDR“. The aim was to design a responsive tool for digital journalism, that empowers anyone to transform video content, images, audio and text into immersive visual stories and digital reports in full screen.

Pageflow meanwhile allows online journalists and storytellers to apply a growing number of interactive digital storytelling elements, such as 360° videos, hotspots, before/after slider, charts and multiple storylines. The system is built on a modular basis and finds itself in a permanent state of development.

MULTIMEDIA

Simply interweave text, audio, images, videos, data & more into compelling visual stories. Pageflow actually provides 13 modules to create interactive reports and multimedia media presentations.”

“Every part of a digital story yearns for a particular medium, suitable to let readers immerse deeply into the narrative. Pageflow’s concept of “Page Types” supports this decision making process and provides intuitive tools for an exact application of the selected formats.

All page types can be extended with additional features: cross-page soundscapes, transition effects, autoplay, multiple storylines, delayed text fade-in and more. The platform simplifies Visual Storytelling and enables Online Journalists, digital storytellers and content agencies an intuitive creation of interactive web stories, online magazines and any kind of multimedia content. Pageflow empowers you to build stories within hours and to publish them within seconds.”

Has a beautiful UI and clearly more current and impressive than many other tools on this list. Pageflow 12 released Sep 7th, 2017. Reports winning two medals at “New York Festivals 2017” for the story “Saigas in Distress – the mystery of dead antelopes”: “Their multimedia report is one of the most elaborate productions with Pageflow so far. It is rich in imagery, video and audio interviews, compelling time-lapses and uses drone footage.”

<http://multimedia.dw.com/the-mysterious-mass-die-off-of-saiga-antelopes-in-kazakhstan#716>



15. Popcorn Maker

<https://ednak.com/popcorn-maker/>

<https://github.com/mozilla/butter>

“Popcorn Maker makes it easy to enhance, remix and share web video. Use your web browser to combine video and audio with content from the rest of the web -- from text, links and maps to pictures and live feeds.”

Mozilla wanted a free-to-use tool that enables some simple interactive\transmedia authoring features. Ceased supporting the project in 2015, homepage now down. Still around as a github project, but seems functionally dead.

16. RacontR

<https://racontr.com/>

“RACONTR IS AN EASY TOOL TO CREATE & SHARE INTERACTIVE CONTENT ONLINE

We created a solution that allows anyone to create great web designs. Without a single line of code or any kind of knowledge in graphic design, make outstanding, unforgettable projects. Forget about grid based experiences. Let your creativity take control of the canvas. Start to make unique interactive creations to use in your communication or marketing plans.

Unleash your creativity with our cloud-based editor to create superb interactive & animated projects. Stand out from the ocean of same-looking kind of content, make a difference in your every day business life.

Our solution is compliant with the most recent standards of the web (HTML5, CSS3). With a simple Google analytics tracking number, you’re able to track down what your audience is doing on your interactive project.

embedWith a simple line of code, embed your content on any third party website or any page of your own. It’s as simple as that. You can also export your project and redirect your audience to a subdomain standalone page.”

“Our Story

RacontR was created by Gregoire Sierra, Julien Hasenfratz and Guilhem Thebault back in 2011. The first version of the editor already offered the ability to design interactive content the most simple way, without a line of code.

In 2014, after 3 years of development, we launched a collaborative platform to create, edit and publish interactive content and gather our users, with the objective to encourage and democratize the design of new interactive formats.

Our goal was to breathe new life to journalism by encouraging digital storytelling project development. At the beginning of this adventure, we aimed our Editor to journalist and large media outlets, but along the way, the user base grown and went far beyond our expectations including graphic designers, interactive directors and much more creatives. We were also adopted by many institutions and organisations as well as schools and NGOs”

17. Rapt Media

<http://www.raptmedia.com/>

“Rapt Media offers a compelling alternative to engage employees and consumers, inspiring them to act. Our cloud-based interactive video platform helps drive deeper engagement, resulting in enhanced learning and faster behavior change.”

Interesting and developed tool, but clearly pricey and geared towards marketing and use by big companies (Rapt works with the like of Phillips)

“Rapt Media is the fastest and easiest way to create world-class Interactive Videos and is fundamentally changing how companies engage with their customers online. With its suite of powerful, browser-based solutions and team of digital media experts, Rapt Media makes possible the creation of highly engaging, Interactive Video experiences at scale.”

“With Rapt Media's cloud-based interactive video platform, build experiences in the Composer, publish them to the player, and measure them in the analytics dashboard. If that's not enough, you can create new, totally custom experiences using the API.

Compose

Build choice-based interactive experiences in minutes with the Composer, our simple drag-and-drop browser-based tool. Connect videos, link out to additional content and calls to action, manage captions, and more—all without writing any code.

Simple media management

Uploading and managing media within the Composer is simple. The media library accepts virtually any video file type. When you upload, we transcode the clip into all the versions needed to play across devices—even natively on iOS.

Browser-based editing

Get up and running in no time. Our easy-to-use browser-based software means there are no apps to download and nothing to install.

Drag-and-drop simplicity

The Composer's drag-and-drop interface allows users of all technical skill levels to arrange content and form a multiple-path interactive narrative.

No code writing needed

Develop experiences without writing any code. We handle the tough, technical work behind the scenes.

Embed & launch

Build once, publish everywhere. Our platform serves interactive videos in an embeddable player, which loads everything it needs from the cloud."

18. Storyplanet

IDN authoring tool aimed at 'networked journalism'. Launched in 2013 to much hype, since then apparently de-commissioned (fb page is dead, so is the main website, other language learning service now has the same name).

<http://www.docnextnetwork.org/interviews-web-tools-for-interactive-storytelling/>

<http://www.mulinblog.com/storyplanet-review-a-promising-multimedia-storytelling-tool-for-digital-journalism-students/>

Mentioned in:

Van der Haak, Bregtje, Michael Parks, and Manuel Castells. "The future of journalism: Networked journalism." International Journal of Communication 6 (2012): 16.

19. ThinkLink

<https://www.thinglink.com/>

"Create interactive images, videos and 360 content in minutes"

Hackstory Tools description: "Make interactive pictures, video's or VR productions. In every production you can add different 'call-to-action' buttons to make it interactive.

Youtube video: https://www.youtube.com/watch?v=Sz_TQ-SYRfw

20. WireWax

<https://www.wirewax.com/>

“Take your videos to a new level of engagement by including clickable areas that perform an action when your audience clicks on them. With WIREWAX’s #1 interactive video technology, your storytelling will immerse viewers and inspire them to take action. We’ve spent 8 years and millions of dollars building the most powerful interactive video tool on the planet. Nothing comes close in speed, versatility and power.

Chosen by over 20,000 users, including Ted Baker, Disney & the BBC.”

HOTSPOT VIDEOS

People, objects and products can be automatically identified with a hotspot added and the motion of the object tracked. This allows viewers to direct click, touch or use a device to interact with any item in the video.

BRANCHING VIDEOS

Our branching videos allow you to create decision points in a video that let viewers decide the path and outcome of the viewing experience.

360° VIDEOS

WIREWAX launched the world’s first interactive 360° experience with US TV network, EPIX in 2016. Unique features like Sticky hotspots allow moving people and objects in your 360° video to become interactive.

MULTI-STREAM VIDEOS

Our multi-stream video technology allows your audience to slide or switch between different videos and camera angles within one.

21. Zeega

<http://zeega.com/>

Zeega is a new form of interactive media, enabling anyone to express themselves by easily combining media from the cloud. Make the web you want.

“With Zeega, you can use any media in the cloud, transform the entire screen into your playground, and share your interactive creations with the world.

Created by a global community, Zeegas are a new form of interactive media. Some Zeegas are funny. Others are sad. A Zeega can be anything you imagine.

We're living in a unique moment. More media than ever is recorded and shared. Zeega is ushering in an era when the web becomes an interactive, audiovisual medium made by everyone.

Zeega was created at Matter, a San Francisco-based accelerator for mission-driven companies committed to changing media for good."

Seems like a fairly easy to use, amateurist tool to make ugly mish-mash multimedia products (mostly texts, gifs, pics, sounds and videos superimposed together) fast

<http://i-docs.org/2014/07/15/interactive-documentary-tools/>

Interactive documentary tools list from 2014

<http://www.pbs.org/pov/filmmakers/resources/interactive-video-making-tools.php>

(Includes examples for products of all of the following tools)

*Find and list Unreal and Unity video plugins, add to the list

Dead Video tools

Agent Stories

<http://mf.media.mit.edu/pubs/conference/AgentStoriesMELO.pdf>

Authoring Computational Cinematic Stories

A very dead interactive video tool developed by Kevin m. Brooks at MIT, 1999

"The goal of my current research project, called Agent Stories, is to provide a story design and presentation environment for nonlinear, multiple-point-of-view cinematic stories. The approach taken with Agent Stories is to assemble narratives in either textual or QuickTime movie form by making use of three key components of computational storytelling: 1) The structure of the narrative; 2) The collection and organization of story pieces with some representation of their meaning; 3) A navigational strategy through that collection of story pieces, with style and purpose; that is, the narrative construction is a product of deliberate decisions and not random choices. The hope is that by designing a tool that knows something about the writing process and about what has been written, a symbiotic relationship can develop between writer and writing tool which will foster the process of nonlinear writing."

Brooks, K. M. Agent stories: Authoring computational cinematic stories. Diss. PhD Thesis, MIT Media Lab, 1999.

Djehouti

<https://www.facebook.com/djehoutiweb/>

“Your interactive story, without a single line of code. Djehouti is a cross platform tool which allows people with no technical knowledge to have a chance to create a dynamic interactive project using HTML5.”

<http://cominweb.djehouti.com/lecteur/14.php#> - website (unresponsive)

Jeherazade + HyPE

Hoffmann, Peter, and Michael Herczeg. "Hypervideo vs. storytelling integrating narrative intelligence into hypervideo." International Conference on Technologies for Interactive Digital Storytelling and Entertainment. Springer, Berlin, Heidelberg, 2006.

Abstract: Hypervideo is one of several possible ways for interactive non-linear media. In its characteristics it is closely related to the purposes of digital narratives. The techniques of hypervideo could be used for the presentation of digitally told stories and vice versa. Many projects in both fields of work show the impressive possibilities each. But there seems to be a lack of using narrative intelligence in hypervideo. This paper shows how both fields of work could benefit from each other. Therefore two projects are introduced and their combination is discussed. The hypervideo environment HyPE includes an authoring tool, a stand-alone player for hypervideos and offers an API for the use in higher-ranking applications. Secondly the storytelling system called Jeherazade is introduced, which bases on the idea to enhance the classical theory of Aristotle to the new form of digital narrative. It is primarily developed for the use in presentations in distributed exhibitions but it is planned to be used for e-learning as well.”

Hyper Hitchcock

http://iris.ofai.at:7777/iris_db/index.php/publications/show/697

Shipman, Frank, Andreas Girgensohn, and Lynn Wilcox. "Hypervideo expression: experiences with hyper-hitchcock." Proceedings of the sixteenth ACM conference on Hypertext and hypermedia. ACM, 2005.

Abstract: “Hyper-Hitchcock is a hypervideo editor enabling the direct manipulation authoring of a particular form of hypervideo called "detail-on-demand video." This form of hypervideo allows a single link out of the currently playing video to provide more details on the content currently being presented.

A workspace is used to select, group, and arrange video clips into several linear sequences. Navigational links placed between the video elements are assigned labels and return behaviors appropriate to the goals of the hypervideo and the role of the destination video. Hyper-Hitchcock was used by students in a Computers and New Media class to author hypervideos on a variety of topics. The produced hypervideos provide examples of hypervideo structures and the link properties and behaviors needed to support them. Feedback from students identified additional link behaviors and features required to support new hypervideo genres. This feedback is valuable for the redesign of Hyper-Hitchcock and the design of hypervideo editors in general.”

B.II - Location-based\AR\MR tools

Crucial resource for this list:

Kampa, Antonia. "Authoring Concepts and Tools for Interactive Digital Storytelling in the Field of Mobile Augmented Reality." International Conference on Interactive Digital Storytelling. Springer, Cham, 2017.

Part of this year's ICIDS Phd consurtiom.

1. AR-Core (Google)

<https://developers.google.com/ar/>

Google's AR kit for Android, commissioned to compete against Apple's slightly earlier publishing or ARKit. An earlier google AR developer environment, **Tango**, has been removed from the web . Functions as a kit used on either Unity, Unreal or Javascript (the multi-platform plugin + javascript function makes this worthy of being considered an authoring tool in my view, though it's not independadt.

Google's AR and VR blog: <https://www.blog.google/products/google-vr/>

2. ARis

<https://fielddaylab.org/make/aris/>

Create location-based games and stories

Create mobile games, tours and interactive stories with ARIS games. Players experience a hybrid world of virtual characters and media in physical space.

WHAT CAN I BUILD WITH ARIS?

With ARIS, you can build an interactive story, tour or game. Players can complete quests, collect items, and talk to virtual characters, all while exploring the world around them.

ARIS works on iOS devices and requires an internet connection to play. ARIS consists of three pieces of software.

Client (The iOS App) - to play games and collect data

Editor - to make ARIS games.

Server - Games live on a database in the cloud. The client and editor read from and write to it.

PRICING

ARIS is free for all to use. If your project begins to see more than 100 players monthly, or you need help designing or modifying ARIS, Contact us to setup a consultation.

FEATURES

Player location (GPS); QR codes; Bluetooth beacons (iBeacons); Image Recognition; Augmented Reality; Navigation of the on-screen map; Alphanumeric codes; Media collection; Social interaction around media collection.

ARIS Allows you to create Mobile Games, Interactive Stories, Scavenger Hunts, Tours and Data Collection Activities

LICENSING

ARIS Games is open-source under the MIT license and free to use. The MIT License is a permissive free software license.”

3. ARKit (Apple)

<https://developer.apple.com/arkit/>

Announced June 2017 by at the Apple WorldWide Developer Conference (WWDC).

“ARKit

Build unparalleled augmented reality experiences for hundreds of millions of users on iOS 11 — the biggest AR platform in the world. ARKit blends digital objects and information with the environment around you, taking apps far beyond the screen and freeing them to interact with the real world in entirely new ways.

Beta - What's New in ARKit 1.5

The latest update of ARKit, available in iOS 11.3 beta, delivers new features that let you create an even more realistic user experience. With improved scene understanding, your app can see and place virtual objects on vertical surfaces, and more accurately map irregularly shaped surfaces. Real world images,

such as signs, posters, and artwork can be integrated into the AR experience, so your app can fill a museum with interactive content or bring a movie poster to life. And now, the pass-through camera view of the real world is higher resolution and supports auto-focus for a sharper view in more situations.

Get started with Xcode 9.3 beta

Bring a poster to life in your app with ARKit 1.5.

Hardware and Software Integration

TrueDepth Camera

iPhone X and ARKit enable a revolutionary capability for robust face tracking in augmented reality apps. Using the TrueDepth camera, your app can detect the position, topology, and expression of the user's face, all with high accuracy and in real time, making it easy to apply live selfie effects or use facial expressions to drive a 3D character.

Visual Inertial Odometry

ARKit uses Visual Inertial Odometry (VIO) to accurately track the world around it. VIO fuses camera sensor data with Core Motion data. These two inputs allow the device to sense how it moves within a room with a high degree of accuracy, and without any additional calibration.

Scene Understanding and Lighting Estimation

With ARKit, iPhone and iPad can analyze the scene presented by the camera view and find horizontal and vertical planes in the room, and can track and place objects on smaller feature points as well. ARKit also makes use of the camera sensor to estimate the total amount of light available in a scene and applies the correct amount of lighting to virtual objects.

High Performance Hardware and Rendering Optimizations

ARKit runs on the Apple A9, A10, and A11 processors. These processors deliver breakthrough performance that enables fast scene understanding and lets you build detailed and compelling virtual content on top of real-world scenes. You can take advantage of the optimizations for ARKit in Metal, SceneKit, and third-party tools like Unity and Unreal Engine.”

The (aforementioned) Apple graphic design software that integrate into ARKit:

Metal 2: <https://developer.apple.com/metal/>

SceneKit: <https://developer.apple.com/scenekit/>

4. CHESS – Authoring Personalized Interactive Museum Stories

Presented at ICIDS 2014 by MaDgIK Lab, Department of Informatics and Telecommunications, University of Athens, Panepistimioupolis, Ilissia

https://link.springer.com/chapter/10.1007/978-3-319-12337-0_4

Vayanou, M., Karvounis, M., Katifori, A., Kyriakidi, M., Roussou, M., Ioannidis, Y.: The CHESS Project: Adaptive Personalized Storytelling Experiences in Museums. In: 22nd Conference on User Modelling, Adaptation and Personalization, Project Synergy Workshop, vol. 1181. CEUR-WS.org (2014)

http://ceur-ws.org/Vol-1181/pros2014_paper_04.pdf

5. EDoS

Tran, C., Sébastien George, and Iza Marfisi-Schottman. "EDoS: An authoring environment for serious games. Design based on three models." Proceedings of ECGBL 2010 The 4th European Conference on Games Based Learning. 4 th ECGBL. 2010.

Abstract: Serious games (SGs), the confluence of e-learning and videogames, have been developing very fast these past years. Indeed, SGs combine aspects of tutoring, teaching, training, communication and information, with entertainment elements derived from videogames, in order to capture people's attention for purposes that go beyond pure entertainment. However, the creation of a SG for educational purposes and professional training is a very time-consuming and expensive process. The challenge is to combine learning objectives and fun characteristics with an acceptable budget and time. For these reasons, we propose an interactive authoring environment, called EDoS (Environment for the Design of Serious Games), designed to assist SG authoring team. The EDoS is based on three models: (1) a formal domain-specific model of pedagogical objectives (competencies, knowledge, and behaviours) at which a SG aims; (2) IMS-LD-SG, an extension of the IMS-LD specification made specifically for SGs and (3) a task model formalized with CTT (Concurrent Task Trees) used to formalize Human-Computer Interactions sequences for screens of the game. The first model is the base of any SG design. Once pedagogical objectives are specified, the SG scenario must be elaborated very precisely to achieve them. The second model IMS-LD-SG is used for this purpose. A SG scenario is structured into logical chains and organizations, at different levels (play, modules, acts, activities) with which the users (learners or staff such as teachers, tutors, etc.) must interact in order to achieve their learning or assistance objectives. During the whole scenario elaborating process, these elements must be clearly defined and linked with the pedagogical objectives of the first model and also with gaming activities. These gaming elements and fun characteristics (amusing interactions, actions of characters, attractive competition, adventure, etc.) are specified by the CTT task model."

6. HoloKit

<https://holokit.io/>

“Amber Garage, a Silicon Valley based creative art & tech studio, on June 1st at Augmented World Expo launched HoloKit, the low cost open source mixed reality experience, which includes the HeadKit cardboard headset and TrackKit software. With your smartphone and Mixed Reality apps, HoloKit provides you access to the world of Mixed Reality right in your hands, affordably.

SDK for developers at Github: <https://github.com/holokit/holokitsdk>

MIT docubase description:

<https://docubase.mit.edu/tools/holokit/>

“Following the DIY path of Google Cardboard, Holokit makes augmented reality affordable. This low-budget AR kit allows users to see virtual objects projected on their surrounding with the help of a pair of mirrors that reflect the screen of a smartphone on a semi-transparent and angled fresnel lens inside a cardboard. At the same time, Holokit uses the smartphone’s camera and sensors to track the surrounding and support interactive experiences. Users can explore various ARKit and ARCore mixed reality apps by using their phones and the cardboard. Unlike AR apps viewed directly on the screen, Holokit allows for a more immersive experience.

Thanks to the open-source hardware, software, and software development kit, Holokit expands the possibilities for developers to explore this field. For now, Holokit only supports iPhone 7, Pixel and Galaxy S8.”

7. HP Reveal Studio (formerly Aurasma)

<https://www.hpreveal.com/>

Drag-and-drop based AR authoring system, now uniquely suited for interaction with smart objects. Seems to mostly target businesses and for-profit projects.

“HP Reveal combines AR and IoT

Attaching augmented experiences to the unique identity of every printed object

Every Object Unique

Giving a unique identity to every printed object enables a variety of differentiated solutions.

Engaging Consumer Experience

Turn everyday objects into new opportunities for engagement through striking augmented reality experiences.”

“HP Reveal makes it easy for anyone to create and use AR, from educators teaching the next generation to the world's leading brands.

Intuitive & Easy To Use Interface

Upload assets and assemble Auras in our easy to use interface - so fast and easy, it can be done in under 60s.

Personalized AR

Reach audience segments using targeting tools like platform, region, time of day, and more.

Real-Time Campaign Insights

Measure campaign results through a comprehensive analytics dashboard”

8. Mapbox

<https://www.mapbox.com/atlas/#api>

Customized map-maker for locative media. Not a full-on IDN authoring tool, but can be useful for IDN work in this category.

“Atlas Server is the foundation for building your maps and apps. Atlas makes map data accessible via a private version of Mapbox.js, the same API that powers Mapbox.com. Use its dozens of plugins to make heat maps, cluster dense data, animate markers, swipe between imagery layers, and customize everything. The API also plugs into our open source Maps SDKs for iOS and Android to power your private mobile apps. And Atlas Server ships with Turf for fast GIS analysis.”

Papers on procedural AR generation by Mark Riedl & co.:

- Sasha Azad, Carl Saldanha, Cheng Hann Gan and Mark O. Riedl. Mixed Reality and Procedural Content Generation in Video Games. Proceedings of the 2016 AAAI Workshop on Experimental AI in Games, Burlingame, California, 2016.
- Sasha Azad, Carl Saldanha, Cheng Hann Gan and Mark O. Riedl. Procedural Level Generation for Mixed Reality Games. Proceedings of the 2016 AAAI Conference on Artificial Intelligence for Interactive Digital Entertainment, Burlingame, California, 2016.

9. _Motive.io

<https://www.motive.io/>

By Motive. Created 2007. Proprietary license, from 59\$/month.

“The Professional Toolkit for Mobile-AR

Motive.io is a professional platform that allows you to integrate cutting-edge AR technology into compelling mobile-AR games and experiences. Start with our Unity templates or our Explore AR app and you’ll have a prototype in your hand within a week. Customize our templates in Unity to create unique apps with your own visual design, branding, and gameplay. All location services, map integration, AR tools and a host of ready-to-go game mechanics are included so you can see your game or experience in action sooner.

Take Creative Control.

Motive provides unparalleled creative control for both creative professionals and game developers. Our drag and drop web editor and extensible Unity SDK allow teams to work in tandem, creating a more efficient workflow. Using Motive to create your app makes rapid prototyping easy. Content can be tested and revised multiple times for maximum precision and seamless user experiences. Keep your users engaged by updating content regularly without having to push a new version of your app through the app store.

Web Based Drag and Drop Authoring tool

Our authoring tool allows you to create robust location-based content and adaptable stories with ease.

Unity SDK – integrates seamlessly with Unity

Location based AR - Engage your users with outdoor real-world games and experiences

Marker-based AR – Engage your users indoors with visual markers”

MIT docubase description: “Motive.io is a tool for developing location-based augmented reality apps and games. The platform is easy to use with its drag and drop authoring interface and Unity Software Development Kit. Authors can integrate 3D maps, 3D annotations, avatars, vision or location-based AR, GPS-based functions, locative sound, branching path narratives, a multimedia engine and more in Motive.io. The creators can start building with ready-to-go Unity templates and AR apps, or projects supported by Motive.io in these case studies.”

<https://docubase.mit.edu/tools/motive-io/>

10. MR-IS – Mixed Reality Interactive StorySystem

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/MR-IS>

IRIS project. Research prototype system – not available for download.

“Technical Description

Interactive Storytelling aims at immersing users in fantasy worlds where they can play a part in an evolving narrative responding to their intervention. Implementing such a concept involves a wide range of computing technologies: the recreation of an artificial world is generally achieved using virtual or mixed reality, while the real-time generation of a narrative including virtual characters makes uses of Artificial Intelligence techniques and formalisms.

If the user is to play a role as a character in the interactive narrative, s/he will have to communicate with virtual characters in a way which should reflect traditional acting. This brings a novel, specific context for multi-modal communication as well as a number of technical challenges. Acting involves a number of attitudes and body gestures that are highly significant both for drama presentation and for communication with virtual actors. At the same time, spoken communication is an essential aspect of a realistic interactive narrative. Dealing with such form of multi-modal communication is faced with several difficulties in terms of real-time performance, coverage and accuracy.

Authoring Description

The overall narrative authoring is processed via the encoding of the main character's role using Hierarchical Task Networks (HTN). The user is expected to be playing his own role as a secondary character.

Strong Points

The very essence of this system is in its ability to provide natural means of interaction for the user, as well as a narratively-immersive experience from the point of view of her interactions' influences on the unfolding of the narrative, in real-time.”

Main Publications

Cavazza M., Martin O., Charles F., Mead S.J., Marichal X. and Nandi A. (2004). Multi-modal Acting in Mixed Reality Interactive Storytelling. IEEE Multimedia, July-September 2004, Vol. 11, Issue 3. [1]

11. SPIRIT\Mock AR

Prototype(s) for first truly accessible AR IDN authoring tool

Research project that involves the creation of an AR tool suite.

Spierling, Ulrike, Peter Winzer, and Erik Massarczyk. "Experiencing the Presence of Historical Stories with Location-Based Augmented Reality." International Conference on Interactive Digital Storytelling. Springer, Cham, 2017.

“In the SPIRIT research project, a location-based Augmented Reality (AR) storytelling application has been developed with the goal to support the imagination of lively historical events at places of cultural significance.”

Kampa, Antonia. "Authoring Concepts and Tools for Interactive Digital Storytelling in the Field of Mobile Augmented Reality." International Conference on Interactive Digital Storytelling. Springer, Cham, 2017.

"In the project SPIRIT, we designed entertaining experiences in cultural heritage sites through mobile location-based augmented reality (AR). The SPIRIT concept is based upon a strong storytelling metaphor. By using mobile devices (smart phones and tablets) as 'magic equipment', users can 'meet restless spirits of historical characters'. Creating this illusion (see left in Figure1) we originate a new media form, which we want to give structure, using the concept of Interactive Digital Storytelling (IDS). Content structures rely on specific interaction styles, unless only hyper-structures are involved. Often XML extensions are used as description languages [1, 2]. In SPIRIT, a Storytelling XML (STARML) dialect has been derived from ARML [3] by adding authoring-friendly XML-tags, with the focus on location-based content description for IDS. Further, a plot engine has been developed that interprets the STARML content structure, processes user interactions and triggers AR video and other media [4]. This engine uses conditions for planning. During development, a location-based experience with professionally produced media content has been authored by an interdisciplinary team and evaluated. Alongside, several authoring tools have been developed for assisting on-site authoring.

[...]We developed MockAR, which is an authoring tool for wire framing AR experiences and graphical user interfaces for non-programmers. It made debugging an easy task.

[...]MockAR enables wire framing AR content. It also facilitated collaboration between programmers and designers. Story-PlaceAR (see middle in Figure 1) enables fast and on-site authoring of location-based content. VideoTestAR (see right in Figure 1) enables fast and prototypical AR video content creation for immediate testing. This saves the costly step of professional content production in the beginning and enables fast video testing and video debugging. StoryStructAR enables non-programmers creating a story structure by implicitly handling conditions for planning, instead of leaving that task to the author. It facilitates planning the plot of the authored story."

12. StoryScope (CURATE)

Basic authoring tool for museum visits based on the writers' CURATE theoretical ontology

Wolff, Annika, Paul Mulholland, and Trevor Collins. "Storyscope: using theme and setting to guide story enrichment from external data sources." Proceedings of the 24th ACM Conference on Hypertext and Social Media. ACM, 2013.

Mulholland, Paul, et al. "Constructing and connecting storylines to tell museum stories." International Conference on Interactive Digital Storytelling. Springer, Cham, 2013.

Abstract: [...] Our novel approach, informed by museum practice, is built around a formalization of stages of museum storytelling that involve: (i) the collection of events, museum objects and their

associated stories, (ii) the construction of story sections that organise the content in different ways, and (iii) the assembly of story sections into a story structure. Here we focus in particular on this final stage of building the story structure. Our approach to providing intelligent assistance to story construction involves: (i) separating overlapping or conflicting story sections into separate candidate storylines, (ii) evaluating candidate storylines according the criteria of coverage, richness and coherence, (iii) assembling storylines into linear, layered or multi-route structures and (iv) ordering the story sections according to their setting within the storyline.”

Wolff, Annika, and Paul Mulholland. "Cultural learning across the Smart City." (2014).

13. StoryPlaces

Locative AR IDN tool presented at ICIDS 2017 by David Millard-
<http://storyplaces.soton.ac.uk/>

14. Wikitude Augmented Reality SDK

<https://www.wikitude.com/>

“Wikitude's all-in-one augmented reality SDK combines Instant Tracking technology (SLAM), Object Recognition and Tracking, top-notch Image Recognition and Tracking and Geo-location AR for mobile, tablets and smart glasses. The engine covers cross-platform AR experiences: native and javascript for both iOS and Android, with available Unity, Cordova, Titanium and Xamarin extension.”

“Wikitude’s cross-platform Augmented Reality SDK combines 3D Markerless Tracking technology (SLAM), Object Recognition and Tracking, Image Recognition and Tracking, support for ARKit and ARCore (SMART), as well as Geo-location AR for apps.

Build amazing location-based, marker or markerless Augmented Reality experiences with the Wikitude SDK. Enterprises, agencies and independent developers benefit from Wikitude’s tools to develop AR apps for Android, iOS, Smartphone, Tablet, Smart Glasses. Unity, Cordova/PhoneGap, Titanium, Xamarin – Wikitude has you covered!”

Youtube intro video: <https://www.youtube.com/watch?v=TJ6TyDxMxKI>

Audio tours\sound-only AR

15. IZI Travel

<https://izi.travel/en>

Web publishing platform + browser based authoring tool for audio walks, developed mostly for tourists and museum visitors.

“In 2011, we – a team of Dutch innovators – joined forces with a Swiss investor with the aim of connecting cities, museums and their stories with travellers who wanted to explore the world in a brand new, innovative way: via a global, open and free platform. A bit like Facebook or Wikipedia. Although this idea wasn't anything new, no-one had yet done it on such a large and ambitious scale.

We do what we do because we really want to help organisations in the culture, heritage and tourism sectors bring their stories to life. We also want to make exploring museums and cities even more inspiring and enriching for visitors and travellers alike.

We realise the greatest challenge we face is making izi.TRAVEL the go-to platform for the travel market: a dynamic hub where thousands of content providers can easily create multimedia guides for millions of travelers. Thankfully, our free platform enables fast growth! Plus we are committed to continuous investment in cutting-edge technology, enabled by a team of more than 50 professionals around the globe.”

16. Roundware

<http://roundware.org/>

“ROUNDWARE IS:

an open, flexible, distributed framework which collects, stores, organizes and re-presents audio content.

It lets you collect audio from anyone with a smartphone or web access, upload it to a central repository along with its metadata and then filter it and play it back collectively in continuous audio streams.

WITH ROUNDWARE, YOU CAN:

create a seamless, non-linear, location-sensitive layer of audio in any geographic space mixed on the fly based on participant input

collect audio from participants in real-time via iOS, Android and web-based devices

tag collected audio with location and project-based metadata for filtering

JOIN THE FUN...

Roundware is an actively-developed open-source project and is free for anyone to use. It was initially developed for sound art installations, but has since been used for innovative museum audio tours as well as other educational purposes.

Soon, Roundware will be expanded to include not only audio, but video, photos and text as well.”

“WHAT MAKES ROUNDWARE DIFFERENT?”

CONTINUOUS AUDIO LAYER

Roundware creates continuous, unique audio experiences for participants rather than a series of discrete audio events triggered by location.

Audio is mixed on the fly and constantly updated by client inputs.

EVOLVES IN REAL-TIME

Contributions to Roundware projects can be heard immediately after submission.

Make a recording on your phone, upload it and wait for a few seconds in the same location and your contribution will filter into the mix.

AESTHETIC AND EXPERIENTIAL

The central goal of Roundware is to create meaningful aesthetic experiences, not simply demonstrate new technology.

Hence the entire system is designed to allow creators and participants to sculpt the experience to their liking.

BORN FROM ART, NOT TECH

Roundware was built to solve an art problem.

In 2009, nothing existed to create evolving, contributory, location-based audioscapes, so Roundware was born and has steadily improved since then for applications well beyond art.”

Scrapes – example project on Vimeo: <https://vimeo.com/15058020>

MIT Docubase description: “Roundware is a flexible, distributed framework which collects, stores, organizes and re-presents audio content. It can collect audio from anyone with a smartphone or web access, upload it to a central repository along with its metadata, and then filter it and play it back collectively in continuous audio streams specific to each participant.

Roundware features several core pieces of functionality:

- * creates a seamless location-sensitive layer of audio comprised of musical elements and participant commentary in any geographic locale
- * serves individualized audio streams to users in a flexible non-linear way based on participant inputs
- * collects audio from participants via iOS, Android and web-based devices
- * tags collected audio with location information as well as any additional project-based metadata such as age, gender or occupation
- * organizes an ever-growing collection of participant contributed audio information

Roundware is used for its original purpose of audio art installations around the world, but is also being used by cultural organizations as a new, more modern way to interact with their audiences.

This said, Roundware is not audio tour software! In some ways, Roundware is the anti-audio tour platform.

- * Audio tours are traditionally about a single authoritative voice whereas Roundware is about a multitude of voices, opinions and ideas mixed together.
- * Audio tours tend to be linear experiences; Roundware is based on a non-linear, flexible, participant-driven, immersive experience.
- * Roundware is designed for sculpting an aesthetic experience, not for explicitly delivering educational or interpretive information.

Roundware is an actively-developed open-source project and is free for anyone to use.”

<https://docubase.mit.edu/tools/roundware/>

17. Voicemap

<https://voicemap.me/>

“STORIES THAT MOVE YOU

Choose from stories, by journalists, novelists, tour guides and passionate locals

Listen to location-aware stories while you walk

Stay on track with effortlessly

interactive maps

Download everything with WiFi, then use VoiceMap offline.”

“VoiceMap takes stories beyond the screen. It papers them to walls, hangs them over statues, and plants them neatly in public parks. Then, when you come along, there they are: reflections on the soul of LA, murder on Edinburgh’s Royal Mile, nostalgia for the vanishing hutongs of old Beijing, and much more, by storytellers and passionate locals all over the world.

All you need is our mobile app for iPhones and Android devices. It uses your location to play audio automatically and includes offline maps. Just put on your headphones and you’re ready to explore.

If you’d like to tell a story of your own, you can start right now, for free. Our publishing tool is easy to use and our team of editors delights in bringing new stories out into the world.”

”

Walking Tour App

Explore at your own pace with VoiceMap’s walking tour app, available for iPhone and Android.

It has offline maps, GPS autoplay and a fast growing catalogue of audio tours by bestselling authors, expert correspondents, veteran broadcasters, passionate locals, and many others.

Publishing Tool

Create your own audio tours with VoiceMap’s publishing tool.

We’ll assign an editor to your project and in three steps you can make your stories heard.

We’ve also connected our publishing tool to a marketplace. You choose the price, and we pay royalties of 50%.

CREATE YOUR OWN AUDIO TOUR

<https://voicemap.me/create-audio-tours>

VoiceMap is a publishing platform for location-aware audio tours. Creating your own audio walk, cycle, riverboat cruise, drive or even rocketship ride is free, and our tools come bundled with the support, enthusiasm and expertise of our editors.

VoiceMap was founded by storytellers, and we’ve used our experience to simplify the process of making a tour. In three steps — map, write, record — you can publish and sell your own VoiceMap. It’ll be available here, at voicemap.me, and from our iOS and Android audio tour apps.

Our storytelling tutorial guides you through the process of mapping your tour, writing your script and recording the audio. Or, for an overview of the process, take a look at this infographic.

A new storytelling medium

Imagine knowing exactly where somebody is when they listen to your story. This is what makes audio with GPS autoplay such an exciting new medium.

You can use VoiceMap's publishing tool to immerse listeners in any kind of story, from traditional walking tours to documentaries to fictional audio dramas."

Dead AR Tools

Art-E-Fact/Cyranus

2004 EU project for interactive museum experience, apparently very much dead. But seems quite ambitious, including gesture recognition feature.

<http://redcap.interactive-storytelling.de/authoring-tools/cyranus/>

lurgel, Ido. "From another point of view: art-E-fact." International Conference on Technologies for Interactive Digital Storytelling and Entertainment. Springer, Berlin, Heidelberg, 2004.

<https://goo.gl/23FcUY>

"In this project, a software environment with designated authoring tools is being developed for the creation of narrative, interactive discussion groups of virtual characters. Interaction comprises chatting with a keyboard and the use of specialized devices, e.g. gesture recognition. Target use groups are visitors of a museum who will get interpretations of works of art from different points of view.

Art-E-Fact¹ is an EU funded project which aims to provide culturally enriching, but also entertaining experiences to museum visitors through interactive installations related to the artworks. These installations are composed of stories which engage the user in dialogs with virtual characters. The user interacts with the characters through keyboard input as well as various special interactive devices. Other interactive devices allow the user to inspect the art more closely so that they come to a greater understanding of the artwork. The knowledge of the multifaceted and deeply personal aspects of art are transferred to the user through conversations with well informed albeit virtual characters. The discussions between these characters are embedded in a story which unfolds against the personal background of each character. This is a model for a new kind of interactive storytelling which places emphasis on a narrative, interactive presentation of a theme through a discussion group."

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1095

Spierling, Ulrike, and Ido Iurgel. "' Just Talking about Art"—Creating Virtual Storytelling Experiences in Mixed Reality." International Conference on Virtual Storytelling. Springer, Berlin, Heidelberg, 2003.

Abstract: "This paper reports on interdisciplinary findings and first results of the ongoing EU-funded R&D project "art-E-fact". Within the project, a generic platform for building a particular genre of Mixed Reality interactive storytelling experiences is under development. It enables artists to script interactive dialogues for multiple virtual characters and a human participant, as well as to freely design any interaction devices and modalities. The interactive play "Just talking about art" will be illustrated as an example. With an edutainment motivation, it introduces virtual characters positioned next to real art pieces in an exhibition. These characters discuss art, while prompting visitors for their opinions and questions. They also provide entertainment by enacting personal conflicts. The content and design issues of the play will be shown as one representative example of what can be built with the art-E-fact platform. The main technical components for the direction of interactive dialogues are explained, and authoring issues are pointed out."

Cyranus – A tool developed by the Art-E-Fact project, presented at the same year and equally dead

Iurgel, Ido A. "Cyranus—an authoring tool for interactive edutainment applications." International Conference on Technologies for E-Learning and Digital Entertainment. Springer, Berlin, Heidelberg, 2006.

"This paper presents the authoring tool Cyranus, which implements novel authoring methods for highly interactive edutainment applications. Both concluded work and ongoing and future issues are presented. Among the concluded work, a framework is described that integrates a hierarchic transition network with non-graph based methods, in particular with a rule-based system. This facilitates the authoring process considerably, and enhances the power to control the logic of an application."

"The creation of the logic of an edutainment application must not become a bottleneck in the production chain. But current authoring methods show clear limits, inasmuch they require unintuitive heavy programming that constraints the creative process and excludes direct authoring by content and education specialists. [...] This paper presents achieved results and ongoing work on solving problems of authoring by enhancing authoring tool principles. The authoring tool that exemplifies these efforts is called Cyranus. It was or is being used within art-e-fact(cf. [3], www.art-e-fact.org), Virtual Human (cf. www.virtual-human.de), Virtual Human with Social Intelligence (a project commissioned by SAP Research Center California for creating virtual assistants and companions), its concepts are being reused and adapted for Inscape (cf. www.inscapers.org), and others."

“Immersive authoring for tangible AR”

Lee, Gun A., et al. "Immersive authoring of tangible augmented reality applications." Proceedings of the 3rd IEEE/ACM international Symposium on Mixed and Augmented Reality. IEEE Computer Society, 2004.

Abstract: “In this paper we suggest a new approach for authoring tangible augmented reality applications, called ‘immersive authoring.’ The approach allows the user to carry out the authoring tasks within the AR application being built, so that the development and testing of the application can be done concurrently throughout the development process. We describe the functionalities and the interaction design for the proposed authoring system that are specifically targeted for intuitive specification of scenes and various object behaviors. Several cases of applications developed using the authoring system are presented. A small pilot user study was conducted to compare the proposed method to a non-immersive approach, and the results have shown that the users generally found it easier and faster to carry out authoring tasks in the immersive environment.”

According to Kampa, “The system “immersive authoring for tangible AR” [14] transforms ‘What You See Is What You Get’ authoring concept into ‘What You Feel Is What You Get’. VideoTestAR enables prototypical AR video production and automatically authors the STARML content structure for immediate experience testing.” (P.2)

Inscape

“Author any mixed reality application”

<http://inscape3d.com/en/>

Seems like its been in-limbo for a while. A post from last August mentions the upcoming release of Inscape 7, working with Microsoft to support Augmented Reality applications with Hololens headsets. Promising to follow up on. Noam was involved in original dev?

<http://inscape3d.com/en/news/22-news/158-with-hololens-inscape-is-handing-you-the-future-on-a-plate>

DIGINEXT's (dev company?) facebook page is active, though:

<https://www.facebook.com/DIGINEXT-568627759886612/>

Easy for beginners, powerful for all

Ideal visual authoring tool for domain experts and trainers who have no programming skills.

Author rich interactive environments

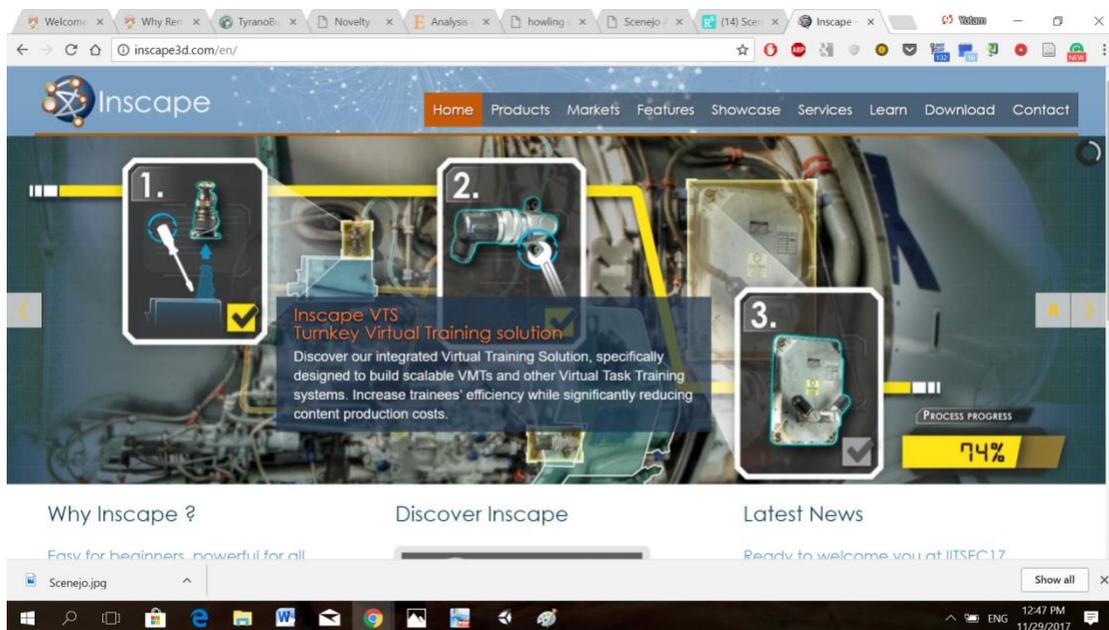
Assemble your 3D assets, multimedia elements, animations, visual effects into compelling scenes and define advanced scenario logics.

Distribute your creations - When your application is ready, publish it and deploy it to your target platforms without limitation.

Augmented Reality applications made easy

Mix AR content with other interactive material without relying on a single technology. Inscape supports the most used AR libraries.

Zagalo, Nelson, et al. "Inscape: Emotion expression and experience in an authoring environment." International Conference on Technologies for Interactive Digital Storytelling and Entertainment. Springer, Berlin, Heidelberg, 2006.



MR-Based Story Composition Tool

Park, Jun, and CheolSu Lim. "Mixed reality based interactive 3d story composition tool." International Conference on Technologies for Interactive Digital Storytelling and Entertainment. Springer, Berlin, Heidelberg, 2006.

Abstract: "For 3D story composition, interactive controls such as scene composition, character actions, and camera placement are important processes. In this paper, a Mixed Reality based interactive tool for 3D story composition is introduced. Using the proposed tool, non-experienced users composed 3D scenes through interfaces in his/her real environments. Preliminary studies showed that proposed 3D story composition tool was convenient and useful by interactively updating scenes through user's control over the stage items and camera viewpoints. "

MuViPlan

Göbel, S., and A. Feix. "MuViPlan: Interactive Authoring Environment to Plan Individual Museum Visits." Proc. Museums and the Web. 2005.

StoryStream

Academic project by Franck Nack & Vriesede Tyrone. Oral stories for city exploration (narrative urban walks)

Vriesede, Tyrone, and Frank Nack. "StoryStream: unrestricted mobile exploration of city neighbourhoods enriched by the oral presentation of user-generated stories." International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2011.

Abstract: "In this paper we present the StoryStream system, a mobile application that constructs a documentary type of narrative of user generated non-fiction stories, which are orally presented to a visitor of a neighbourhood while he or she freely explores the surroundings. The aim of the system is to enhance the exploration experience by providing context related information that adapts to the information interests of the user. "

U-Create

<https://goo.gl/8Us3nc>

Game creation tool, seems on the borderline between IDN and E-learning. No news of it beyond the two papers (can't find 2007 one, but they are probably pretty much identical). Features separate 'story' and 'stage' editors, could have some interesting concepts behind its features but clearly a poor and dated interface.

"The U-CREATE project aims at efficient content creation for new technologies, in particular interactive setups, Mixed Reality experiences and location-based services. A graphical authoring tool is developed to allow one to create elaborated contents in a fast and easy way."

Sauer, Sebastian, et al. "U-create: Creative authoring tools for edutainment applications." Technologies for Interactive Digital Storytelling and Entertainment (2006): 163-168.

Göbel, Stefan, et al. "U-CREATE: Authoring tool for the creation of interactive storytelling based edutainment applications." EVA. 2007.

<https://www.aaai.org/ocs/index.php/AIIDE/AIIDE11/paper/viewFile/4046/4404>

Basically an AR sub-tool that helps make AR narrative structures ‘importable’ to different geographies – therefore, your AR narrative can be adaptable to the layout of wherever the player is, rather than site-specific.

http://iris.ofai.at:7777/iris_db/index.php/publications/show/238

Margolis, Todd, et al. "Immersive realities: articulating the shift from VR to mobile AR through artistic practice." The Engineering Reality of Virtual Reality 2012. Vol. 8289. International Society for Optics and Photonics, 2012.

Alternate Reality Games (ARGs) are interactive narrative experiences that engage the player by layering a fictional world over the real world. Mobile ARG stories are often geo-specific, requiring players to visit specific locations in the world. Consequently, mobile ARGs are played infrequently and only by those who live within proximity of the locations that the stories reference. In this paper, we describe an ARG platform, WeQuest, that addresses the geo-specificity limitation through end-user content generation. An authoring tool allows end-users to create new ARG stories that can be executed automatically on geo-location aware mobile devices, leading to greater numbers of available stories to be played. An intelligent process called location translation makes geo-specific ARGs playable anywhere in the world.

First (?) presented in ICIDS 2011:

Hajarnis, Sanjeet, et al. "Scaling mobile alternate reality games with geo-location translation." International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2011.

Abstract: “We present a case study of interactive story creation, in which we applied a proof mechanism based on Linear Logic to the authoring process. After initial scenario modeling for dynamic plot generation based on planning, we used the mechanism in iterations of refinements to find possible problems within a huge possibility space of resulting discourses. We describe first results of our case study, discuss prospects and limitations and point out future work.”

B.III - VR tools

Main 4 VR\MR tools are listed above: Unity, Unreal3D ,(and less popular) Cryengine & Amazon Lumberyard.

1. Cardboard Camera

By Google

<https://play.google.com/store/apps/details?id=com.google.vr.cyclops&hl=en>

Basic app to turn photos into 360 VR that’s viewable via Google Cardboard

“Capture and share moments with virtual reality (VR) photos. VR photos let you experience scenery and sound in every direction and in 3D, making near things look near, and far things look far. From vacation travels to family get-togethers, capture the moment with Cardboard Camera and relive it in VR.”

HackaStory tools description: “Take a VR photo and add audio with this Google App. Make moments come to life with 3D visuals.”

2. Microsoft Holostudio

<https://www.microsoft.com/en-us/hololens/apps/holostudio>

Microsoft native authoring environment for the Hololens - <https://www.microsoft.com/en-us/hololens>

Successful mostly in its MR applications.

“Build 3D in 3D with natural gestures and movement, creating holograms with holographic tools modeled from tools in the real world.

Create your own holograms

It's easy to design 3D objects when you're working in 3D. This fast and simple workshop features a variety of holographic shapes and tools.

Design your projects to scale in your real world, even placing them on surfaces or objects in your room. Zoom in larger-than-life to focus on the details.

Bring your creations to life

Capture photos and videos of your holographic projects, or see how the physical output matches your creation with 3D-print compatibility.

Developer highlights

Here are some insights into the development of this app for Microsoft HoloLens that will help as you start creating your own.

Grounding visuals

Consider using a glow against real-world surfaces to help users understand the position of their holograms relative to those surfaces.

Mixed reality capture

HoloStudio uses MRC in a unique way, allowing users to create stop-motion video by moving elements of their 3D creations slightly between frames.

Remembers where you build

Even with the toolbox across the room, any shape the user grabs is automatically at the right distance to place on their creation with only the turn of a head.

Clicker

HoloStudio takes advantage of all clicker gestures including click to select and click, hold, and drag to make subtle adjustments with tools.”

3. Microsoft Visual Studio

<https://www.visualstudio.com/>

Microsoft multi-platform graphical software (open source, 4000+ extensions). Mentioned here because it must be included in VR authoring for Microsoft’s HoloLens headset, for adaptation\customization of projects developed on anything but HoloStudio.

4. React VR (Facebook)

<https://facebook.github.io/react-vr/>

By Facebook. Open source Github project, released 2017.

“Build VR websites and interactive 360 experiences with React

Get started with React VR

React VR lets you build VR apps using only JavaScript. It uses the same design as React, letting you compose a rich VR world and UI from declarative components.”

Tutorial - <https://facebook.github.io/react-vr/docs/getting-started.html>

React is a javascript library for building UI - <https://reactjs.org/>

5. SceneVR

<https://scene.knightlab.com/>

By KnightLab (Northwestern University)

In beta

“Easy-to-make VR stories.

SceneVR is an engaging way to tell stories from an entirely new perspective. It turns your collection of panoramic and VR-ready photos into a series of navigable scenes, allowing you to create unique 360° narratives. A simple-to-use editor allows you to order your photos, add descriptions and add text. Your

stories can then easily be embedded and viewed anywhere using simple and intuitive controls. Best of all, because SceneVR runs entirely in your browser, your stories can be viewed on desktop, mobile devices and even the most popular VR devices without the need for any extra apps or plugins.”

HackaStory Tools description: “SceneVR (Beta) turns your collection of panoramic and VR-ready photos into a series of navigable scenes.”

6. StorySpheres

<https://storyspheres.com/>

“A tool for enhancing 360 images that lets you position audio within a scene, to easily create interactive e Features

Upload your 360 image to see up, down, all around

Position sounds within the scene as background audio, or triggered hotspots

Embed your Sphere on your site so that your audience can interact with experiences.”

HackaStory Tools description: “Add audio to 360-degree photos to create an interactive experience. Lead your user to the next video to create a multimedia story.”

7. VivePort

Vive’s publishing platform, that seems to include some sort of authoring environment. Vast majority of Vive projects are created using Unity/Unreal/Cryengine and ported, however.

“INTRODUCING VIVEPORT FOR DEVELOPERS

The most creative minds are driving the world’s most immersive virtual reality experiences.

VIVE and Valve created the most advanced VR platform in the world to allow you to create the most immersive virtual reality experiences. Come and build new worlds.

Resources

VIVEPORT SDK

VIVEPORT Scene SDK

VIVEPORT SDK for Android (Unreal)

VIVEPORT Submission Guidelines 1.6

VIVE Software Unity Plugins

SteamVR Unity Plugins

Unreal Engine 4 Quickstart Guide

VRTK - Virtual Reality Tool Kit

SteamVR Developer Support

SteamVR General Support

VIVEPORT Classroom SDK

Connect and share your thoughts in a moderated forum. Learn from other developers helping shape the future of virtual reality.

Discuss Development

Talk with fellow developers about your challenges and solutions developing for VIVE, and VR in general.

<http://community.viveport.com/t5/Developer-Forums/ct-p/developers>

Viveport - Your Life in VR

VIVEPORT is the app store where you can explore, create, connect and experience all the content you love and need in virtual reality.

A Global Audience

Share your apps with the world. VIVEPORT is the only global virtual reality app store—available on VIVE, web browsers and as desktop and mobile apps.

Diverse Content

VIVEPORT showcases an ever-growing portfolio of virtual reality experiences across a wide variety of content categories.

Use virtual reality to drive positive global impact!”

8. VRDoodler

By MIT Open Documentary Lab. Launched 2016.

VRDoodler is a browser-based 3D drawing platform that can render in virtual reality and into 3D printable objects. Haven is a crowd-sourced audio-visual storytelling VR platform to be built on top of VRDoodler. The net result is a 3D "Harold And The Purple Crayon meets Humans of New York" content-creation platform that is mobile, easy to use, and free.”

MIT docubase description: “For creative professionals and amateurs alike who want easy and quick 3D ideation and collaboration, VRDoodler provides a 3D storytelling platform which can be used in VR and AR.

Unlike Vizor, Google Tiltbrush, Unity, and other 3D modeling tools, only VRDoodler offers a mobile-friendly and free-form way to create free-form VR and AR content. Go online, register for free, and start doodling!”

<https://docubase.mit.edu/tools/vrdoodler/>

Youtube: https://youtu.be/dUYhSD_Zjgo

9. WebVR

<https://webvr.info/>

Open source web-based VR development, cross-platform portal.

<https://github.com/immersive-web/webxr>

Bringing Virtual Reality to the Web

What is WebVR?

WebVR is an open specification that makes it possible to experience VR in your browser. The goal is to make it easier for everyone to get into VR experiences, no matter what device you have

How do I experience WebVR?

You need two things to experience WebVR: a headset and a compatible browser.”

MIT Docubase description: “WebVR is an experimental Javascript API (application programming interface) that enables the user to experience virtual reality on a web browser by supporting VR devices such as Google cardboard, Oculus Rift, Samsung Gear VR and HTC Vive. It functions in common browsers like Mozilla Firefox and Google Chrome with no downloads or installs required.

This tool allows VR creators to build projects supported by the web, increasing the accessibility of this technology that can be applied to almost anything, from visualizing abstract math concepts in VR, experiencing a live digital feed of forest imagery, exploring data analysis, to telling an interactive abstract story about finding love.

The new WebVR version 2.0 is being developed by a team of members from Mozilla, Google, Microsoft, among others and is still in early stages. But the existing version is available and works with frameworks such as A-Frame, React VR, Vizor, and Primrose.”

<https://docubase.mit.edu/tools/webvr/>

10. Wonda

By WondaVR

Starter version for 49\$/month (limited free demo available)

<http://www.wondavr.com/>

“A professional authoring solution for your 360° VR Experiences.

Features:

Intuitive user Interface

Easy-to-use drag and drop interface. Visual Storyboard and multi-track Timeline.

Compatible with any Media

Import 360° videos or photos, 2D images, stereo or spatial audio and any text fonts. (+)

Unlimited Story Paths

Connect unlimited numbers of 360° media using automatic links, custom buttons or hotspots. (+)

Advanced Interactions

Trigger rich visual interactions based on user’s behavior and gaze at any specific point of interest. (+)

Look at

Reset default user’s camera position towards any area of interest between cuts. (+)

Instant Preview

Preview your project instantly on all platforms. (+)”

HackaStory tools description: “Create interactive experiences for 360 and VR. Add interactive hotspots to your 360 degree photo or video in a very comprehensive environment.”

Youtube video: <https://youtu.be/nMaeYPWvkSo>

Dead VR Tools

ACOSAS

Erdmann, Dennis, Klaus Dorfmüller-Ulhaas, and Elisabeth André. "Integrating VR-authoring and context sensing: Towards the creation of context-aware stories." International Conference on Technologies for Interactive Digital Storytelling and Entertainment. Springer, Berlin, Heidelberg, 2006.

Abstract: "Recent progress in the area of sensor technology has enabled the development of context-aware systems that are able to dynamically adapt their behaviours to the current situation and the individual user. In this paper, we present a framework for a new generation of context-sensitive stories that dynamically adapt to changing environmental conditions and user states. The framework combines approaches to interactive storytelling with work on context toolkits that foster the rapid prototyping of context-aware applications."

Sample game: "The VR Tourist Guide Ritchie", where the VR character Ritchie "provides the user with information on the city of Augsburg as a preparation for a real visit on the same day".

Sub-lists

All the tools below don't fully qualify as IDN authoring tools – they cannot be used to create an interactive narrative from start to finish, or if they somehow can, are not uniquely intended to. They can, however, aid the IDN authoring process in some way or another. Based mostly on Deglaucy's list. These tools are not very relevant to our main research questions, and the list is therefore quite partial and I'm not putting particular effort into extending it. I did think it's good to keep around as a secondary resource.

The following 6 lists include both IDN tools already listed above that fit the category, and other tools, software and/or projects that do not qualify to our definition of an IDN authoring tool, but are deemed to be of interest in their respective categories nonetheless.

C.I Academic tools

Academic tools (see other document for detailed list) –complete the listing with newer tools I found

1. ASAPS

2. CHESS (MR)
3. Curveship
4. Dine
5. EXPRESSIONIST
6. Hypedyn
7. IDTension
8. Korsakow
9. Story Canvas
10. StorySpaces
11. StoryPlaces (AR)
12. Tracery
13. Wide Ruled 2.0

Dead

14. AdventureAuthor
15. Agent Storeis
16. ART-E-Fact/ Cyranus
17. Bowman/Zocalo
18. CrossTalk
19. DINAH
20. Dramachina
21. FearNot! (FAtiMA)
22. GADIN
23. Inscape
24. The authoring part of the IS engine
25. MOE
26. PRISM
27. Recontre
28. Scenejo
29. SceneMaker\Visual Scenemaker
30. SOAP (environment based on Scenemaker)
31. Scribe
32. Storybricks Engine
33. StoryStream
34. StoryTron\SWAT
35. StoryTec
36. U-Create

Academic procedural generation tools (partial list)

Defacto
Thespian
The Virtual Storyteller
ISRST-IS
Mimesis

C.II E-Learning Tools

Definition: **List of tools usable in classroom\targeting children to facilitate development. Only narrative-related tools are counted:**

I had a paragraph on these above. Also, this is a new list and I need to add more tools here!

ComposAR

Wang, Yuan, et al. "An authoring tool for mobile phone AR environments." Proceedings of New Zealand Computer Science Research Student Conference. Vol. 9. 2009.

Abstract: "This paper describes an authoring tool for mobile phone Augmented Reality (AR) applications. This work is based on earlier work at the HIT Lab NZ on a tool for authoring PC based AR applications called ComposAR. In this paper, we describe modifications to ComposAR that allows end-users to prototype mobile AR applications on a PC, and mobile player software that will allow the prototype applications to be delivered on a mobile phone. In this way, end-users with little programming experience can develop simple mobile AR applications. "

EDoS

See AR tools above.

According to Kampa's paper at the ICIDS 2017 PHD consurtion, both ComposAR and EDoS are good tools, but require programming knowledge.

FaTe2

Dead

Garzotto, Franca, and Matteo Forfori. "FaTe2: storytelling edutainment experiences in 2D and 3D collaborative spaces." Proceedings of the 2006 conference on Interaction design and children. ACM, 2006.

Abstract: “Storytelling, edutainment, and collaborative interaction are all powerful paradigms to promote learning in young kids. The FaTe2 project offers a combination of these paradigms by providing a web based, multi-user, two and three dimensions virtual space where children (aged 7-11) can meet, chat, explore, play, and perform storytelling activities in collaboration. The paper describes the background of FaTe2, its educational motivations, its design solutions, and its implementation approach”.

HP Reveal (previously Aurasama)

<https://studio.hpreveal.com/landing>

“HP Reveal combines AR and IoT: Attaching augmented experiences to the unique identity of every printed object

Fingerprint icon: Giving a unique identity to every printed object enables a variety of differentiated solutions.”

“HP Reveal is changing the way we interact with the world

Turn everyday objects, images, and places into new opportunities for engagement through striking augmented reality experiences.

HP Reveal makes it easy for anyone to create and use AR, from educators teaching the next generation to the world's leading brands.

Intuitive & Easy To Use Interface

Upload assets and assemble Auras in our easy to use interface - so fast and easy, it can be done in under 60s.

Personalized AR

Reach audience segments using targeting tools like platform, region, time of day, and more.

Real-Time Campaign Insights

Measure campaign results through a comprehensive analytics dashboard.

Deliver Phenomenal Results

We help the world's leading brands use augmented reality in mobile campaigns to drive real results. Our customers see phenomenal performance across diverse KPIs and goals including social engagement, landing page visits, and merchandise sales.

Delight and engage customers

Create immersive brand experiences in augmented reality. We enable a seamlessly branded experience through your apps, and allow your customers to experience interactive brand moments that are both actionable and memorable.

Engage, convert, sell

Shorten the path to conversion by connecting offline marketing to online channels with an augmented reality experience that directs customers to points of sale, landing pages, social engagement channels, and more. Our customers see success across diverse KPIs and goals, with click through and engagement rates that significantly outperform industry averages for digital and mobile.

Measure results

We believe good augmented reality is not only memorable, but also measurable. Add measurability to offline marketing and gain deeper insight into how your marketing mix contributes to conversions and sales. HP Reveal's best-in-class web studio for creating, managing, and tracking augmented reality campaigns includes a comprehensive analytics dashboard for views, interactions, clicks, and more.

Flexible Distribution Options

Since HP Reveal owns 100% of our technology, we offer one of the most flexible solutions on the market for leveraging augmented reality. Have an app? Don't have an app? We have the solution to fit your needs.”

JabberStamp

“Jabberstamp is the the first tool that allows children to synthesize their drawings and voices. To use Jabberstamp, children create drawings, collages or paintings on normal paper. They press a special rubber stamp onto the page to record sounds into their drawings. When children touch the marks of the stamp with a small trumpet, they can hear the sounds playback, retelling the stories they have created.

Children ages 4+ can use Jabberstamp to embed names, narratives, characters’ voices and environmental sound effects in their original drawings. Children’s compositions help them communicate their stories with peers and adults, and allow them to record and situate stories in personally meaningful contexts to share with others, before they have mastered writing.

<http://tangible.media.mit.edu/project/jabberstamp/>

<https://vimeo.com/44541844>

Kudo

<https://www.microsoft.com/en-us/research/project/kodu/?from=http%3A%2F%2Fresearch.microsoft.com%2Fen-us%2Fprojects%2Fkodu%2F>

By Microsoft

In limbo

Visual coding game-creation language for children, with some ingrained narrative templating. Seems to have gone unsupported since circa 2012.

“Kodu is a new visual programming language made specifically for creating games. It is designed to be accessible for children and enjoyable for anyone. The programming environment runs on the Xbox, allowing rapid design iteration using only a game controller for input.

Programming as a Creative Medium

The core of the Kodu project is the programming user interface. The language is simple and entirely icon-based. Programs are composed of pages, which are broken down into rules, which are further divided into conditions and actions. Conditions are evaluated simultaneously.

The Kodu language is designed specifically for game development and provides specialized primitives derived from gaming scenarios. Programs are expressed in physical terms, using concepts like vision, hearing, and time to control character behavior. While not as general-purpose as classical programming languages, Kodu can express advanced game design concepts in a simple, direct, and intuitive manner.”

Narrative-Centered Tutorial Planning\Crystal Island

By Mott & Lester, North Carolina State University

This is an attempt to combine story generation and learning algorithms for a narrative tutorial system implementable to classwork. Crystal Island is the demo environment developed through this logic, for upper elementary science education. While the authors pertain to have created an underlying authoring logic for similar systems, work until 2014 seems focused on Crystal Island alone and ceases from there forward, and there is no mentioned authoring tool to further implement their model (which seems quite intriguing).

Abstract: “[...]In this paper we present a narrative-centered tutorial planning architecture that integrates narrative planning and pedagogical control. The architecture continually constructs and updates narrative plans to support the hypothesis-generation-testing cycles that form the basis for inquiry-based learning. It is being used to implement a prototype narrative-centered inquiry-based learning environment for the domain of microbiology. The planner dynamically balances narrative and

pedagogical goals while at the same time satisfying the real-time constraints of highly interactive learning environments.”

“The narrative-centered tutorial planning architecture directs all of the core activities of the learning environment (Figure 1). All student activities are mediated through the interface manager for the virtual environment. The interface manager interacts with the world model, which houses the 3D object and character models, the properties of manipulable objects, and the scene geometries. The world model drives both the rendering and sound engines. The planner consists of three components: a tutorial planner, a narrative planner, and a plan executor and monitor. The tutorial planner operates in the tutorial planning space. It utilizes domain knowledge, curriculum constraints, tutorial strategies, and concept difficulty annotations to make its decisions. The narrative planner operates in the narrative planning space. It utilizes a library of plot elements, a library of character behaviors, a set of world event categories, and narrative constraints on possible stories to make its decisions. The plan executor and monitor interact with both the tutorial and narrative planning spaces. It sends directives to the character behavior controller and the world model. All three planning components are influenced by the student model, and the plan executor and monitor also reads from (and updates) the tutorial and narrative states.

The narrative-centered tutorial planning architecture provides all of the functionalities that classic tutorial planners provide, as well as the functionalities that narrative planners provide. With regard to tutorial planning, it selects and presents problems, sequences content from the curriculum, provides timely and context-specific advice and explanations, manages the initiative, and selects and executes tutorial strategies [17, 19, 24, 26]. To address the requirements of inquiry-based learning, its tutorial

strategies support question formation, hypothesis generation, data collection, and hypothesis testing. With regard to narrative planning, it generates all plot elements, sequences plot elements into coherent and engaging stories, and directs characters' actions and storyworld events to achieve tutorial and narrative goals."

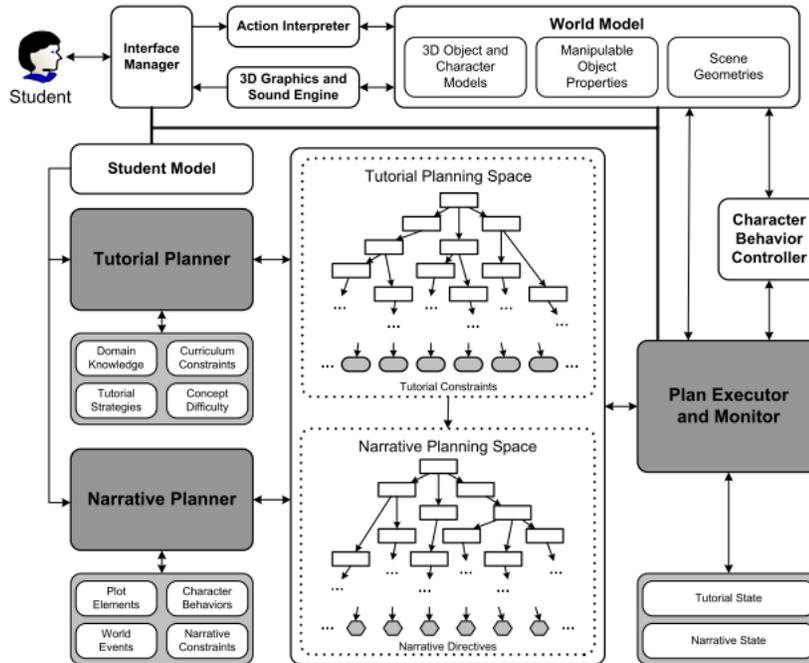


Fig. 1. Narrative-Centered Tutorial Planning Architecture

[31] B. Mott, S. Lee, and J. Lester. Probabilistic goal recognition in interactive narrative environments. In Proceedings of the Twenty-First National Conference on Artificial Intelligence (AAAI06), 2006.

B. Mott and J. Lester. Narrative-centered tutorial planning for inquiry-based learning environments. In Proceedings of the 8th International Conference on Intelligent Tutoring Systems (ITS06), 2006.

B. W. Mott, C. Callaway, L. Zettlemoyer, S. Lee, and J. Lester. Towards narrative-centered learning environments. In Proceedings of the AAAI Fall Symposium on Narrative Intelligence, pages 78–82, 1999.

Lester, James C., et al. "Designing game-based learning environments for elementary science education: A narrative-centered learning perspective." Information Sciences 264 (2014): 4-18.

Processing

<https://processing.org/>

Developed by Casey Reas and Ben Fry

Initially released 2001, Processing 3 released 2015, latest stable release 3.3.7 September 2017

“Processing is a flexible software sketchbook and a language for learning how to code within the context of the visual arts. Since 2001, Processing has promoted software literacy within the visual arts and visual literacy within technology. There are tens of thousands of students, artists, designers, researchers, and hobbyists who use Processing for learning and prototyping.

- » Free to download and open source
- » Interactive programs with 2D, 3D or PDF output
- » OpenGL integration for accelerated 2D and 3D
- » For GNU/Linux, Mac OS X, Windows, Android, and ARM
- » Over 100 libraries extend the core software
- » Well documented, with many books available”

Wikipedia entry:

[https://en.wikipedia.org/wiki/Processing_\(programming_language\)](https://en.wikipedia.org/wiki/Processing_(programming_language))

“Processing is an open-source computer programming language and integrated development environment (IDE) built for the electronic arts, new media art, and visual design communities with the purpose of teaching non-programmers the fundamentals of computer programming in a visual context. The Processing language builds on the Java language, but uses a simplified syntax and a graphics user interface.

The project was initiated in 2001 by Ryan Hopkins and Casey Reas and Ben Fry, both formerly of the Aesthetics and Computation Group at the MIT Media Lab. In 2012, they started the Processing Foundation along with Daniel Shiffman, who joined as a third project lead. Johanna Hedva joined the Foundation in 2014 as Director of Advocacy.[2]

Processing includes a sketchbook, a minimal alternative to an integrated development environment (IDE) for organizing projects.

Every Processing sketch is actually a subclass of the PApplet[3] Java class (formerly a subclass of Java's built-in Applet) which implements most of the Processing language's features.

When programming in Processing, all additional classes defined will be treated as inner classes when the code is translated into pure Java before compiling. This means that the use of static variables and methods in classes is prohibited unless Processing is explicitly told to code in pure Java mode.

Processing also allows for users to create their own classes within the PApplet sketch. This allows for complex data types that can include any number of arguments and avoids the limitations of solely using standard data types such as: int (integer), char (character), float (real number), and color (RGB, RGBA, hex).”

Processing 3 presentation: <https://vimeo.com/140600280>

Scratch 2.0 (see hybrid tools above)

ShadowStory

Lu, Fei, et al. "ShadowStory: creative and collaborative digital storytelling inspired by cultural heritage." Proceedings of the SIGCHI Conference on Human Factors in Computing Systems. ACM, 2011.

Abstract: “With the fast economic growth and urbanization of many developing countries come concerns that their children now have fewer opportunities to express creativity and develop collaboration skills, or to experience their local cultural heritage. We propose to address these concerns by creating **technologies inspired by traditional arts, and allowing children to create and collaborate through playing with them. ShadowStory is our first attempt in this direction, a digital storytelling system inspired by traditional Chinese shadow puppetry.** We present the design and implementation of ShadowStory and a 7-day field trial in a primary school. Findings illustrated that ShadowStory promoted creativity, collaboration, and intimacy with traditional culture among children, as well as interleaved children’s digital and physical playing experience. “

StoryFactory

(see linear writing tools below)

Storytelling Alice

<http://www.alice.org/get-alice/storytelling-alice/>

In limbo

Alice is a relatively successful E-learning app for children to learn programming. Storytelling Alice, a phd project for a previous version of the program, focused on narrativity to facilitate this learning

“OTE: Storytelling Alice is no longer supported. It is available for download because we still receive some requests and because it provides a glimpse of some of the ideas influencing the design of Alice 3. But, use at your own risk.

Storytelling Alice was created by Caitlin Kelleher as part of her doctoral work in Computer Science at Carnegie Mellon University. For details on the design, development and evaluation of Storytelling Alice, please see Caitlin's homepage.

In contrast to the large number of people who use computers and computer programs in their daily lives, relatively few learn to create their own computer programs. Storytelling Alice is a programming environment designed to motivate a broad spectrum of middle school students (particularly girls) to learn to program computers through creating short 3D animated movies.

To enable and encourage users to create animated stories, Storytelling Alice includes:

1. High-level animations that enable users to program social interactions between characters.
2. A story-based tutorial that introduces users to programming through building a story.
3. A gallery of 3D characters and scenery with custom animations designed to spark story ideas.

Storytelling Alice provides a motivating context in which to learn programming. A study comparing middle school girls' experiences with learning to program in Storytelling Alice and in a version of Alice without storytelling features (Generic Alice) showed that:

- Users of Storytelling Alice spent 42% more time programming than users of Generic Alice.
- Users of Storytelling Alice were more than three times as likely to sneak extra time to work on their programs as users of Generic Alice (51% of Storytelling Alice users vs. 16% of Generic Alice users snuck extra time to program).
- Despite the focus on making programming more fun, users of Storytelling Alice were just as successful at learning basic programming concepts as users of Generic Alice."

Psomos & Kordaki:

Storytelling Alice (Kelleher, 2006), introduces students to computer programming through the construction of 3D animated stories. Its main age target group is between 10 and 17 year old children. It's a variant of Alice which is an object-oriented educational programming language. Its

emphasis on storytelling is based on the following three differences: i) Social interactions between the characters are possible through the programming of high-level animations. ii) Users are introduced to programming through building a story with the help of a story-based tutorial iii) A library with 3D characters and scenery is existent so as to stretch users' imagination.

Source – comparative article:

Psomos, Panagiotis, and Maria Kordaki. "Pedagogical analysis of educational digital storytelling environments of the last five years." *Procedia-Social and Behavioral Sciences* 46 (2012): 1213-1218.

TaleBlazer

<http://www.taleblazer.org/>

By MIT Step lab, launched 2013

About page: "TaleBlazer is our latest augmented reality (AR) software platform. Developed by the MIT Scheller Teacher Education Program (STEP) lab, TaleBlazer allows users to play and make their own location-based mobile games. By situating games in the real world, AR games seek to engage people in experiences that combine real landscapes and other aspects of the physical environment with additional digital information supplied to them by smartphones.

Making Games

The TaleBlazer editor is browser-based, with no local installation required. The TaleBlazer editor uses a visual blocks-based scripting language - which makes it easy to create rich interactivity, while helping users avoid syntax errors. Users create accounts allowing them to save game files to the cloud, which can then be download directly to a player's smartphone. TaleBlazer game designers have instant access to TaleBlazer games from any computer attached to the Internet."

According to Kampa's piece, has no open story structure

Toontastic (see hybrid tools above)

TUVI

(see above)

Voodoo

Ribeiro, Pedro, Ido Iurgel, and Manuel Ferreira. "Voodoo: A system that allows children to create animated stories with action figures as interface." *International Conference on Interactive Digital Storytelling*. Springer, Berlin, Heidelberg, 2011.

Abstract: "Dolls, employed as tangible interfaces, have the potential to provide an easy to learn interaction device that allows children to animate virtual characters in an intuitive way. We assume that dolls and action figures are more compelling, easy to use, and immersive for children than standard interfaces to create movies. We present Voodoo, a prototype of a system where children take over the role of a movie director, animating virtual characters with action figures. Voodoo translates the action figures movements into animations, based on movement patterns and on the narrative context of a well-known story. We maintain that our approach will easily and joyfully empower children to create animated stories."

Dead\in limbo

AHA

University of Eindhoven

De Bra, Paul, and Licia Calvi. "AHA: a generic adaptive hypermedia system." Proceedings of the 2nd Workshop on Adaptive Hypertext and Hypermedia. sn, 1998.

*Not narrative-focused, but influenced sculptural hypertext narrative systems such as HypeDym and Connction Muse.

"Since early 1994 the course "2L670: Hypermedia Structures and Systems" has been available through the Web. It is currently part of the curriculum for computing science and related fields at six universities in The Netherlands and Belgium, and occasionally offered to students from other institutes as well. The software used to deliver this course over the Web has evolved from a static hyperdocument to a versatile adaptive hypermedia system that can be used for many purposes. We call the system AHA, which stands for Adaptive Hypermedia Architecture.

The core of the AHA system consists of an engine which maintains a user-model based on knowledge about concepts. Knowledge is generated by reading pages and by taking tests. The (textual or multimedia) content of a page can be adapted by means of fragment variants. The (hyper)links are annotated by changing the color of the link anchor (the link text or the border in case of images). The color scheme can be configured by the author and overridden by the user, to choose between link annotation and link hiding. When desired, link removal can also easily be implemented.

The adaptive hypermedia software can be used for all kinds of applications, not necessarily limited to education (which is what its primary purpose was). It is written (almost) entirely in Java and thus portable to different computing platforms. It is freely available for non-commercial use.”

Interbook

<http://www.contrib.andrew.cmu.edu/~plb/InterBook.html>

“InterBook is a tool for authoring and delivering adaptive electronic textbooks on the World Wide Web. InterBook provides a technology for developing electronic textbooks from a plain text to a specially annotated HTML. InterBook also provides an HTTP server for adaptive delivery of these electronic textbooks over WWW. For each registered user, an InterBook server maintains an individual model of user's knowledge and applies this model to provide adaptive guidance, adaptive navigation support, and adaptive help.

InterBook applies some results of research in the area of Adaptive Hypertext and Hypermedia. These research demonstrate that adaptive navigation support can make hypermedia browsing more productive and protect users from "being lost" in hyperspace. to provide students with these guidance as well as providers of learning materials with standards and authoring tools for an efficient utilization of the WWW as an intelligent learning support media. Adaptive navigation support techniques applied in InterBook proved to be efficient for educational applications of hypertext and hypermedia.

InterBook is used to deliver several adaptive Web-based courses. In Carnegie Mellon University InterBook is used to serve course materials for courses on ACT-R theory of cognitive modeling.”

Brusilovsky, P.; Eklund, J.; and Schwarz, E. “Web-Based Education for All: A Tool for Developing Adaptive Courseware,” in Computer Networks and ISDN Systems (Proceedings of Seventh International World Wide Web Conference, Apr. 14–18, 1998; vol. 30, nos. 1–7), pp. 291–300.

Wayang Authoring (see dead hybrid tools above)

C.III - Gestural interface tools

Definition: tools that involve interaction through bodily gestures\input (beyond the typical mouse and keyboard\basic touchscreen interface).

This list includes includes:

1. Authoring tools listed above that facilitate gestural interface and can be said to partially or fully belong to the 'Post-PC Dispositif' (Knoller & Ben-Arie 2015)
2. Further tools and systems that do not fully qualify as IDN authoring tools, but entail interesting use of gestural interface and can work in conjunction to authoring tools to facilitate creation of IDNs with gestural feedback.

Amazon Lumberyard

CryEngine

Microsoft Holostudio

Pubcoder

ReactVR

SteamVR

<http://store.steampowered.com/steamvr>

By Valve (who own Steam) and Vive. Currently the most popular\capable interface for playing VR games with motion capture.

Unity (plugins)

Unreal (Plugins)

Any unique VR, Nintendo WII or other consule tools could apply. Also go over the other game engines.

Further tools

Disney BCC System

<https://www.disneyresearch.com/publication/enabling-interactive-infrastructure-with-body-channel-communication/>

By Disney Research

Varga, Virag, et al. "Enabling Interactive Infrastructure with Body Channel Communication." Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies 1.4 (2018): 169.

Abstract: "Body channel communication (BCC) uses the human body to carry signals, and therefore provides communication and localization that are directly tied to human presence and actions. Previous BCC systems were expensive, could operate only in a laboratory, or only focused on special use cases. We present here an end-to-end BCC system that is designed for ambient intelligence. We introduce the

BCC infrastructure that consists of portable devices (e.g., a simple sphere), mobile devices (e.g., a smartwatch-like wristband), and stationary devices (e.g., floor/wall tiles). We also describe the core technology that is used in each of these units. The TouchCom hardware-software platform is a simple transceiver with software-centered processing. The focus on software (even the implementation of the physical layer is based on software) allows the adaptivity that is necessary to operate a BCC-based system in practice. The paper describes the design and a prototype implementation of the TouchCom-based interactive infrastructure and provides evidence that this BCC infrastructure works for different persons and different setups. The system provides moderate bandwidth (about 3.5 kb/s) that is suitable for several usage scenarios like games, localization, and identification. The implemented demonstrations illustrate the benefits these applications gain when touching an object is tied to communication.”

Crystal Tools

https://en.wikipedia.org/wiki/Crystal_Tools

<http://www.hd.square-enix.com/jpn/index.html>

“Crystal Tools is a game engine created and used internally by the Japanese company Square Enix. It combines standard libraries for elements such as graphics, sound and artificial intelligence while providing game developers with various authoring tools. The target systems of Crystal Tools are the PlayStation 3, the Xbox 360, Microsoft Windows and the Wii. This was decided with the intention of making cross-platform production more feasible. The idea for the engine sprang from Square Enix's desire to have a unified game development environment in order to effectively share the technology and know-how of the company's individual teams.

Crystal Tools entered development in August 2005 under the code name White Engine. It was intended for the then PlayStation 3-exclusive role-playing game Final Fantasy XIII. The decision to expand Crystal Tools' compatibility to other game projects and systems marked the official project start for a company-wide engine. Development was carried out by the Research and Development Division headed by Taku Murata, which was specifically established for this purpose.”

Generic framework for situated collaborative writing

Hills, Damian, Yusuf Pisan, and Ernest Edmonds. "Towards a generic framework for situated collaborative storytelling." *Proceedings of the 5th Australasian Conference on Interactive Entertainment*. ACM, 2008.

Abstract: “How we assimilate stories into our common experiences and shape culture is the field of study known as narrative intelligence. By following these assumptions and investigating theories of conversation and rhetoric, this paper outlines a generic framework for a visual collaborative storytelling system that emphasizes participatory narration and shared understanding in a situated context.”

ICIDS presentation on gestural interface of this system:

Hills, Damian. "assimilate: an interface for collaborative narrative construction." *International Conference on Interactive Digital Storytelling*. Springer, Berlin, Heidelberg, 2011.

Abstract: " This paper describes the interface component of a visual collaborative storytelling system that enables participatory narration by means of tangible user interaction. The essential feature of the interface is to incorporate participants' creative actions by embedding metaphorical schemes through its mechanics and from the visualisation of self-organising content to support collaborative narrative comprehension."

FingARtips

Buchmann, Volkert, et al. "FingARtips: gesture based direct manipulation in Augmented Reality." Proceedings of the 2nd international conference on Computer graphics and interactive techniques in Australasia and South East Asia. ACM, 2004.

Abstract: "This paper presents a technique for natural, fingertip-based interaction with virtual objects in Augmented Reality (AR) environments. We use image processing software and finger- and hand-based fiducial markers to track gestures from the user, stencil buffering to enable the user to see their fingers at all times, and fingertip-based haptic feedback devices to enable the user to feel virtual objects. Unlike previous AR interfaces, this approach allows users to interact with virtual content using natural hand gestures. The paper describes how these techniques were applied in an urban planning interface, and also presents preliminary informal usability results."

Referred to in Josh Fisher's ICIDS 2016 paper, therefore still alive

Fisher, Joshua A. "Strong Concepts for Designing Non-verbal Interactions in Mixed Reality Narratives." International Conference on Interactive Digital Storytelling. Springer, Cham, 2016.

HNIM – Interaction Model Editor

Prototype by Noam Knoller

Shaul, Nitzan Ben, et al. "System for generating an interactive or non-interactive branching movie segment by segment and methods useful in conjunction therewith." U.S. Patent Application No. 12/936,824.

Knoller, Noam, and Udi Ben Arie. "Turbulence—a user study of a hypernarrative interactive movie." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2009.

Oculus

<https://developer.oculus.com/>

Facebook's Oculus also does not have an independent authoring tool, but has a bunch of plugins and SDKs (software development kits) for the popular engines. These adapt Oculus' spatial and gestural configurations with the popular authoring tool's developing environment. In addition to these SDKs,

Facebook React provides what seems like a similar alternative that adapts the environment slightly more.

There are also potential gestural-UI developments in the recently-released Facebook Spaces, a social VR platform: <https://www.facebook.com/spaces>

It is noteworthy that both Facebook and Vive make no effort at a true independent authoring tool, and instead put their efforts into comfortable extensions for existing popular development platforms (namely Unity, Unreal, WebVR, and Javascript. Oculus also features SDKs for 'Native Windows', 'Native Android', and 'Legacy', whatever that means).

GearVR (Samsung)

<http://www.samsung.com/global/galaxy/gear-vr/>

GearVR does not seem to have its own authoring studio, but it does include a somewhat unique VR controller interface.

Google VR

Cardboard: <https://vr.google.com/cardboard/>

In multiple platforms, Google is developing gestural interfaces to fit into their broader VR\AR projects and headsets (new VR headset to be released in partnership with Lenovo).

Google's AR and VR blog: <https://www.blog.google/products/google-vr/>

Nintendo Web Framework\Dev Interface

<https://developer.nintendo.com/tools>

The Nintendo Web Framework is a development environment that makes building Wii U applications simple. Founded on WebKit technologies and harnessing common programs - including HTML5, JavaScript, and CSS - it allows development to span across the Wii U GamePad, Wii Remote controllers, and more.

Nintendo Dev Interface

Prepare Development Environments With Ease

Our newest gem in the box is the NDI Client. NDI stands for Nintendo Dev Interface, but it's really going to be your new best friend. The NDI Client will help make sure you have the optimal development environment on your development system — by downloading and installing it all for you! You can tailor

it to the platform you're developing for, the SDK you want, even the region you're working in. It allows for easy download of all the relevant guidelines and documentation you need to do your work. It even allows you to update the firmware of certain development kits.

Wekinator

<http://www.wekinator.org/>

By Rebeka Fiebrink, released 2009.

"The Wekinator is free, open source software originally created in 2009 by Rebecca Fiebrink. It allows anyone to use machine learning to build new musical instruments, gestural game controllers, computer vision or computer listening systems, and more.

The Wekinator allows users to build new interactive systems by demonstrating human actions and computer responses, instead of writing programming code.

Example applications include:

Creation of new musical instruments

Create mappings between gesture and computer sounds. Control a drum machine using your webcam!
Play Ableton using a Kinect!

Creation of gesturally-controlled animations and games

Control interactive visual environments created in Processing, OpenFrameworks, or Quartz Composer, or game engines like Unity, using gestures sensed from webcam, Kinect, Arduino, etc.

Creation of systems for gesture analysis and feedback

Build classifiers to detect which gesture a user is performing. Use the identified gesture to control the computer or to inform the user how he's doing.

Creation of real-time music information retrieval and audio analysis systems

Detect instrument, genre, pitch, rhythm, etc. of audio coming into the mic, and use this to control computer audio, visuals, etc.

Creation of other interactive systems in which the computer responds in real-time to some action performed by a human user (or users)

Anything that can output OSC can be used as a controller

Anything that can be controlled by OSC can be controlled by Wekinator"

MIT Docubase description: "A free and open source software that allows you to build interactive systems based on human actions and gestures, instead of programming code. It is a listening software that recognizes movements and composes visual and audio outputs, using regression, classification and other supervised analysis models. Wekinator operates like a switchboard – it lives between different sources of input and output that use the open sound control protocol, making it easier to create complex relationships between someone's movements and sounds in creative, independent and nonlinear way."

<https://docubase.mit.edu/tools/wekinator/>

Dead

Assimilate

Hills, Damian. "assimilate: an interface for collaborative narrative construction." International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2011.

Abstract: "This paper describes the interface component of a visual collaborative storytelling system that enables participatory narration by means of tangible user interaction. The essential feature of the interface is to incorporate participants' creative actions by embedding metaphorical schemes through its mechanics and from the visualisation of self-organising content to support collaborative narrative comprehension."

ADAPT + ABAS (academic project, see "dead hybrid tools" above)

DEEPSAPCE

Kuka, Daniela, et al. "Deep space: high resolution VR platform for multi-user interactive narratives." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2009.

Abstract: "DEEP SPACE is a large-scale platform for interactive, stereoscopic and high resolution content. The spatial and the system design of DEEP SPACE are facing constraints of CAVE™-like systems in respect to multi-user interactive storytelling. To be used as research platform and as public exhibition space for many people, DEEP SPACE is capable to process interactive, stereoscopic applications on two projection walls with a size of 16 by 9 meters and a resolution of four times 1080p (4K) each. The processed applications are ranging from Virtual Reality (VR)-environments to 3D-movies to computationally intensive 2D-productions. In this paper, we are describing DEEP SPACE as an experimental VR platform for multi-user interactive storytelling. We are focusing on the system design relevant for the platform,

including the integration of the Apple iPod Touch technology as VR control, and a special case study that is demonstrating the research efforts in the field of multi-user interactive storytelling. The described case study, entitled "Papyrate's Island", provides a prototypical scenario of how physical drawings may impact on digital narratives. In this special case, DEEP SPACE helps us to explore the hypothesis that drawing, a primordial human creative skill, gives us access to entirely new creative possibilities in the domain of interactive storytelling."

VR Toolkit/VR Tuner

http://iris.ofai.at:7777/iris_db/index.php/publications/show/992

2004 academic project.

Wages, Richard, Benno Grützmacher, and Stefan Conrad. "Learning from the movie industry: Adapting production processes for storytelling in VR." International Conference on Technologies for Interactive Digital Storytelling and Entertainment. Springer, Berlin, Heidelberg, 2004.

Abstract: "Any movie production needs a whole group of contributing authors and creative artists from various fields. The same should obviously be true for the making of a compelling VR scenario. Hence artists need to have direct access to the VR production process itself. In the VR domain however artistic and computational challenges are usually still severely interwoven. Thus nearly all of the (art) work is currently done by computer experts due to the unstructured workflow and the lack of creative tools for authors. In this paper we present two novel tools which we developed to adopt movie production procedures namely the VR Authoring Tool and the VR Tuner. The first is a tool to create a nonlinear screenplay and storyboard analogue to the beginning of every movie production. The second tool, the VR Tuner, facilitates editing and post-production of VR scenarios for the first time. We conclude with a brief description of our experiences during a first evaluation of the tools."

HIP Storytelling

In limbo\unknown

Melo, Narciso, et al. "HIP-storytelling: hand interactive projection for storytelling." International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2011.

Abstract: "We have created an interactive storytelling system for public spaces that is collaborative, easy and entertaining to use, and allows for a natural interaction. The system consists of a table, a ceiling mounted projector that projects onto the table, and a 3D camera for tracking hands and for object recognition. The main feature of the system is the projection on top of the palm of the hand of the users; thus, the hand becomes also a viewing surface. This allows for very natural gestural interaction, such as holding and passing objects between users. For example, in the course of narrative, users can hand over a story character or object to each other. We also employ projection based

augmented reality to animate real objects on the table. Apart from entertainment, the system shall be employed for concrete educational interactive storytelling applications in public spaces. “

InterFace Portrait

By Noam Knoller

Knoller, Noam. "InterFace portraits: communicative-expressive interaction with a character's mind." Proceedings of the 1st ACM workshop on Story representation, mechanism and context. ACM, 2004.

Abstract: “In this paper, I introduce the notion of communicative-expressive interaction with a character’s mind, within an interactive fiction video. It is an interaction model that allows a participant continuous interaction with a story as a way of increasing the participant’s agency and immersion and consequently both the sense of engagement and the meaning of the interactive experience in its relation to the story. I describe a work-in-progress system called the InterFace Portrait Storyteller, in which participants use familiar gestures performed on a touch screen to explore the character’s mind, which is constructed as a diegetic space. I also describe two interactive video installations, “One Measure of Happiness” and “Have I Lost My Plot?” within which the system interacts with either narrative or non-narrative approaches to the representation of diegetic space.”

C.IV Interactive Journalism tools

Definition: tools built with interactive journalistic storytelling in mind – facilitating either professional journalistic work, or amateur generation of journalistic content and non-fiction\documentary reportage. Interactive journalism is an area of growing interest and importance, argued by some to be capable not only of expanding the journalistic practice into interactive forms, but also, through this shift, of addressing many of the challenges traditional journalistic storytelling is faced with in contemporary times (Van der Haak & co, 2012, Koenitz & co EU2020 proposal). Interactive journalism tools are typically meant to supplement traditional journalistic stories with interactive content (see function-specific, below), ease the production of multimedia journalist stories), or facilitate the publishing, distribution and discussion of journalistic (multi)media in interactive ways (either via web portals or unique integration with social media platforms). As such, most existing interactive journalism tools do not meet our full criteria for an IDN authoring tool. However, as production of journalistic and documentary stories in fully interactive form becomes increasingly commonplace, an increasing subset of IDN authoring tools is either centers on journalistic content, or (more commonly and in the case of many interactive video tools) treats journalists as an important subset of its intended userbase and takes care to structure itself as to support the creation of such content. (With this trend in mind, Koenitz & co’s EU2020 proposal aims to construct a new authoring tool ideal for such purposes). This sublist includes tools of both types, though the function-specific tools list is highly partial at this point.

Van der Haak, Bregtje, Michael Parks, and Manuel Castells. "The future of journalism: Networked journalism." *International journal of communication* 6 (2012): 16.

Hackastory tools list: <https://digitalstory.tools/>

IDN tools included above:

The Break Up

By Ian Forrester & Anna Few (developed for the BBC)

Still in development, see video tools above.

Creativist (see video tools above)

Exposure (see video tools above)

Klynt (see video tools above)

RacontR (see video tools above)

VoiceMap (see audio tour AR tools above)

IZI Travel (see audio tour AR tools above)

EthnoAlly

By Pablo Fernandez Muga

<https://itunes.apple.com/us/app/ethnoally/id1104947792?mt=8>

"EthnoAlly is a digital research tool designed for coordinating those multiple acts of "serendipitous ethnography" that can be enacted today in many variable contexts with the help of smartphones. EthnoAlly consists of an application capable of collecting a variety of audio-visual, geolocative and textual materials. It also has an on-line platform; a set of web services, on which such information can be stored, visualized, organized and analysed. It is at once a tool for taking notes and a multimodal diary. It functions as a unique support for innovative participatory practices making it the ideal partner and 'ally' of today's ethnographer with immense possibilities for documentary filmmakers, journalists, artist and other professionals."

<https://docubase.mit.edu/tools/ethnoally/>

"EthnoAlly is a mobile application that enables researchers to create and organize multimodal field notes for ethnographic studies. The mobile app produces GNSS-tagged multimodal material which is then archived, organized and analyzed on a cloud application server. Ethnoally functions as a personal

assistant for ethnographers in their exploration of people and places, as well as a participatory tool that researchers can use with their interlocutors, both in person and remotely — for example, in the form of multimodal diaries. The mobile app can be downloaded to research participant’s device allowing them to generate images, text notes, sound files and geolocate and temporal metadata, functioning as an extension of the ethnographer.”

StoryMaker

<http://storymaker.cc/>

<https://github.com/StoryMaker/storymaker>

By TheGuardian. Launched 2014.

MIT docubase description: “StoryMaker is an open source app that enables existing and aspiring journalists all over the world to produce and publish professional-grade news with their Android phone, as safely and securely as possible. It provides an interactive training guide, walkthroughs, and templates for users to follow as they plan their piece and capture media. The app then helps assemble the content into a finished format, with cuts and basic graphics.

The app’s textbook will teach you how to be a mobile journalist. StoryMaker’s templates will give your story structure to produce photo, audio, or video stories. Overlays will improve your compositions.

You will be able to share your own stories and publish them to any service or platform available on android.”

<https://docubase.mit.edu/tools/storymaker/>

Multimedia journalism

Aesop Story Engine - <http://aesopstoryengine.com>

“Write stories instead of code

Aesop Story Engine is a collection of thirteen unique components wrapped in a plugin that can be used to present rich, interactive stories or articles in any WordPress theme.

Choose from thirteen unique story components, then arrange them in any order and customize them to weave your narrative--right in the WordPress post or page editor. Need big, eye-catching images? Handled. How about a few columns of content with images and

captions? An image gallery? How about an audio podcast? They're all no problem. Full-width videos? Piece of cake. Even timelines and story collections are built in."

(How much more narrative-driven are these tools\engines\portals\IDEs than the likes of Wordpress and Adobe Muse?)

Does it have anything to do with the AESOP system presented here?

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1080

Silverman, Barry G., et al. "Authoring edutainment stories for online players (AESOP): Introducing gameplay into interactive dramas." International Conference on Virtual Storytelling. Springer, Berlin, Heidelberg, 2003.

Abstract: The video gaming industry has experienced extraordinary technological growth in the recent past, causing a boom in both the quality and revenue of these games. Educational games, on the other hand, have lagged behind this trend, as their creation presents major creative and pedagogical challenges in addition to technological ones. By providing the technological advances of the entertainment genres in a coherent, accessible format to teams of educators, and developing an interactive drama generator, we believe that the full potential of educational games can be realized. Section 1 postulates three goals for reaching that objective: a toolset for interactive drama authoring, ways to insulate authors from game engines, and reusable digital casts to facilitate composability. Sections 2 and 3 present progress on simple versions of those tools and a case study that made use of the resulting toolset to create an interactive drama.

Evrybit

<http://getevrybit.com/>

"Evrybit is an all-in-one app for mobile reporting and storytelling. Built by professional journalists for anyone, Evrybit allows users to create and edit multimedia stories on smartphones in real time, collaborate and distribute media, find and engage with consumers, and monetize content. Stories told with Evrybit can be embedded on websites, distributed on mobile devices, shared on social media and integrated with content management systems. Our mission is to inform and connect the world through storytelling."

ReadyMag (See web portals below)

FOLD

<https://fold.cm/>

By MIT Media Labs. Released 2014.

"Create. Remix. Discover."

FOLD is an open publishing platform that makes it easy to explain and explore new ideas

<https://fold.cm/read/FOLD/what-is-fold-TiyWEK6C>

ABOUT

FOLD is an open publishing platform with a unique structure that lets writers link media cards to the text of their stories. Media cards can be videos, photos, gifs, maps, tweets, audio, free text, or links. They are created by searching through YouTube, Flickr, Soundcloud, and more from inside the text editor.

FOLD was initially developed at the MIT Media Lab's Center for Civic Media in 2015.

FOLD helps you understand.

FOLD is perfect for exploring topics in depth. Because everything is card-based, FOLD does not constrain authors to linear storytelling or force readers to open hundreds of tabs just to keep everything straight.

This makes FOLD a great platform for any topic that is media intensive, such as music or film, or for complex topics that deal with a variety of perspectives. It's also great for how-to articles that actually teach you, well, how to do stuff.

FOLD is easy to use.

We're a completely open platform. That means anyone can create a FOLD! Just sign up with email or a Twitter account from the FOLD home page and click "Make a Story" from the top bar. This explanatory article took about 10 minutes to write—so don't stress, just try it out.

We're currently hard at work on lots of new features: embedding, analytics for authors, new card types, and much more. Getting better every day 🤖”

MIT Docubase description: “FOLD is an open platform for reading, authoring, and publishing modular stories wrapped in contextual information like photos, maps, videos, tweets, interactive visualizations, and more. On FOLD, stories have a cross-like structure, with a backbone of modular narrative cards, each of which can be associated with multiple context cards. Authors can provide “curated tangents” to readers by integrating contextual information from online sources or by reusing other authors’ context blocks.”

<https://docubase.mit.edu/tools/fold/>

StoryForm

<https://storyform.co/>

“Create truly responsive stories, white-papers, blog posts, or reports with our unique format that automatically takes advantage of every device size. With full screen video and imagery, interactivity, and lots of great layouts and designs to choose from, you can replace those static PDFs and boring blog posts.

Integrate with your site - Use Storyform with your existing site on a per page basis with a WordPress plugin or let Storyform host it for you.

No code - Never write a line of code, and never design from scratch. Storyform is the easiest way to publish.

Design flexibility - Select from a growing family of full-story themes, choose micro-templates for things like captions and headings, or customize everything yourself.

Intuitive interface -Utilizing all forms of touch and keyboard inputs, and best-in-class architectures Storyform provides an exceptional, buttery-smooth user experience.

SEO focused (search engine optimization) - Storyform uses only standards based HTML5. So your content is easily crawl-able and without the hassle of flash or other browser plugins.”

Sway

By Microsoft

<https://sway.com/>

“Create visually striking newsletters, presentations, and documentation in minutes

Easily add content from anywhere

Easily drop in photos, videos, and other multimedia — Sway is integrated with your device and the web.”

Hackastory tools description: “Very easy to use for building a one-pager. Upload video, text, audio, tweets, etc. It’s easy to embed in several (mobile) websites.”

See web-portals below

Function-specific

DeepStream

<http://deepstream.tv/>

No longer under active development.

“Enhanced Video Content Made Easy.”

MIT Docubase page: “DeepStream is a web platform for enhancing your video, whether it is a livestream or upload. You can quickly and easily add related content like news stories, images, maps and social media to your videos to tell richer stories that connect with your viewers. You can also build community by screening viewer-suggested content and collaborating with other contributors. The experience you create can be embedded on any website, and it works with the leading video platforms, including YouTube, Vimeo, Facebook Live, Periscope, Ustream, Livestream.com and more.

Deepstream.tv works as a video annotation tool for uploaded video from sites like YouTube, with content timestamped to appear at just the right moment. With livestreams, content appears automatically to your viewers as soon as you add it. From enhanced director’s cuts to live and breaking news events Deepstream.tv is a way to add a level of context and backstory to your video, with no technical skills required.”

<https://docubase.mit.edu/tools/deepstream/>

INN Labs (Knightlab tools combined Wordpress plugin)

<https://wordpress.org/plugins/storytelling-tools/>

HackaStory Tools description: “INN Labs collected the storytelling tools from the Knight Lab in one WordPress plugin. The Storytelling Tools plugin seamlessly integrates your creations from Timeline.js, Storymap.js, Juxtapose.js and Soundcite.js in WordPress.”

LocalFocus

<https://www.localfocus.nl/en/>

Dutch portal\tool

“Turn datasets into stories

From dataset to story in 5 steps

Collaborate online with your team

Visualisations in your own brand

Make visualisations for web and print”

HackaStory Tools description: “Make a data driven story. Just upload your data and it generates a graphic, which you can adapt in a lay-out.”

SoundCite

By Knightlab (Northwestern University)

<http://soundcite.knightlab.com/>

“Seamless inline audio

Audio is a powerful device that can add emotion or context to a story. Unfortunately audio clips force uncomfortable choices: read or listen, but not both. Until now. SoundCite is a simple-to-use tool that lets you add inline audio to your story. The audio is not isolated; it plays right under the text you choose.”

Juxtapose

<https://juxtapose.knightlab.com/>

“Juxtapose helps storytellers compare two pieces of similar media, including photos, and GIFs. It’s ideal for highlighting then/now stories that explain slow changes over time (growth of a city skyline, regrowth of a forest, etc.) or before/after stories that show the impact of single dramatic events (natural disasters, protests, wars, etc.).”

StoryMapJS

<https://storymap.knightlab.com/>

By Knightlab (Northwestern University)

“StoryMapJS is a free tool to help you tell stories on the web that highlight the locations of a series of events. It is a new tool, yet stable in our development environment, and it has a friendly authoring tool.”

Interactive web-based timelines

Similie Widgets: Timeline – <http://www.simile-widgets.org/timeline/>

Part of the the SIMILIE widgets collection; an open-source “spin-off” from the SIMILE project at MIT. They offer free, open-source web widgets, mostly for data visualizations. They are maintained and improved over time by a community of open-source developers. With Timeline you can create an interactive web-based widget for visualising temporal data.

TimelineJS - <http://timeline.knightlab.com/>

By KnightLab (Northwestern University)

“TimelineJS is an open-source tool that enables anyone to build visually rich, interactive timelines. Beginners can create a timeline using nothing more than a Google spreadsheet. Experts can use their JSON skills to create custom installations, while keeping TimelineJS’s core look and functionality.”

Vimeo tutorial: <https://vimeo.com/143407878>

Tiki Toki - <https://www.tiki-toki.com>

Create beautiful timelines

Tiki-Toki is web-based software for creating beautiful interactive timelines that you can share on the internet.

The following 5 lists do not contain any tools in the main overview of IDN authoring tools, and are included, for various reasons, due to broader relevance to the field.

C.V - Mixed-initiative\collaborative authoring story generation tools

Definition: author-centric story generation tools, where the AI generative system is meant to facilitate human authoring . Mixed initiative tools typically function either by working alongside the human, such as in the line-by-line authoring of Creative Help – or (**this could be an extension of the definition**) as platforms for generative AI authoring that are constructed to facilitate a high degree of customization, so that the human user pre-authors the process in a meaningful way (such as Tracery’s flexible grammar system). This list includes:

1. Authoring tools listed above with a strong AI generation component.
2. Tools that do not fully qualify as IDN authoring tools, but integrate mixed initiative in a meaningful way. The majority of these are mixed-initiative systems that facilitate the authoring of linear texts – but by intervening in the authoring process, they make the author’s creative experience, rather than the end-product\experience of the end-user, interactive.

See below for expansion (relevant category listed in parenthesis).

Bowman-Zocalo\DEF (Hybrid tools – dead)

Emohawk (Academic prototypes)

Enigma (academic prototypes)

Expressionist (Other hybrid tools)

IDTension (Other Hybrid Tools - Dead)

Korsakow (Interactive video)

MOE (Parser – Dead)

StoryBricks Engine (Game engines – Dead)

Story Canvas (Other hybrid tools)

Storytron\SWAT (Parser - Dead)

Tracery

Wide Ruled 2.0 (Other hybrid tools)

Mixed initiative tools that didn't qualify for overview (not quite full IDN authoring tools):

Automated Story Director\IN-TALE

(Riedl – “mixed simulation control”)

Riedl, Mark O., Andrew Stern, and Don M. Dini. "Mixing Story and Simulation in Interactive Narrative." AIIDE. 2006.

“Mixed simulation control refers to a technique in which the player’s emerging experience is “controlled” by a combination of simulation and prescribed storyline.”

“In this section, we describe an interactive storytelling system built on top of a game engine that uses a multitude of AI controllers, including an automated story director and several autonomous agents.”

Acts as a kind of middleware that integrates an AI drama manager into the authoring structure of a game engine (in the case of Riedl’s original article, an older version of Unreal).

*Sponsored by US army research grant, and implemented in the prototype system IN-TALE, utilized for US army training.

Riedl, Mark O. Towards integrating AI story controllers and game engines: Reconciling world state representations. UNIVERSITY OF SOUTHERN CALIFORNIA MARINA DEL REY CA INST FOR CREATIVE TECHNOLOGIES, 2006.

In Arinbjarnar & co: "The IN-TALE (Interactive Narrative Tacit Adaptive Leader Experience) [55] system is designed for training soldiers. The user will find themselves in a scenario which could occur in the line of duty. They will be able to act as freely as they would in reality and their actions will determine whether they are able to successfully diffuse the situation. The ending will adapt to ensure that the problematic events will always occur – however the user chooses to act. The drama is generated based on a plot graph. Planning is used to determine whether the current path being followed is likely to be successful or if this needs to change, and the action adjusts appropriately"

Creative Help

Institute for Creative Technologies, University of Southern California,

Roemmele, Melissa, and Andrew S. Gordon. "Creative help: a story writing assistant." International Conference on Interactive Digital Storytelling. Springer, Cham, 2015.

Abstract: **"We present Creative Help, an application that helps writers by generating suggestions for the next sentence in a story as it being written. Users can modify or delete suggestions according to their own vision of the unfolding narrative.** The application tracks users' changes to suggestions in order to measure their perceived helpfulness to the story, with fewer edits indicating more helpful suggestions. We demonstrate how the edit distance between a suggestion and its resulting modification can be used to comparatively evaluate different models for generating suggestions. We describe a generation model that uses case-based reasoning to find relevant suggestions from a large corpus of stories. The application shows that this model generates suggestions that are more helpful than randomly selected suggestions at a level of marginal statistical significance. **By giving users control over the generated content, Creative Help provides a new opportunity in open-domain interactive storytelling."**

Creative Help

USC Institute for
Creative Technologies

Type \help\ when you need it.

I just returned from a particularly exotic vacation. We spent hours on flights and just to get to South America, and then from there had to make our way all the way to the mountains at the foot of the continent. Perhaps if I were more Sarah Palin-esque I would make an ill thought out comment about being able to see Antarctica from the mountain tops.

The best part of the trip was the hiking, one moment warm and sunny, and the next bitter cold with icy rain moving up the mountain. Irregardless the meteorological changes, we moved further up, further in.

I should explain our traveling party some. It began as just myself. I had hoped to make it a solitary venture. An opportunity to step back from the fast-paced life I normally lead and experience the awesome majesty of the most majestic mountain range on earth. That didn't last long. Word of my idea got out and very quickly two guys from work wanted to join in. Offering to split the costs it made sense financially, but at the same time frustrated my attempts at spiritual and physical rejuvenation.

Nothing could spoil the beauty of this wondrous place though. Not even their ridiculously awful driving along the bumpy, back country roads.

At night, the stars would light up the sky in a way which is far beyond the paltry attempts of humanity upon the advent of electricity. I watched the stars dance their way through the deep violet sky. \help\

Mentioned in:

Roemmele, Melissa, and D. D. N. Intelligence. "Writing Stories with Help from Recurrent Neural Networks." AAAI. 2016.

Where Romelle declares a new project on an improved version.

Clark, Elizabeth, et al. "Creative Writing with a Machine in the Loop: Case Studies on Slogans and Stories." 23rd International Conference on Intelligent User Interfaces. ACM, 2018.

Where a similar system is implemented to study "creative writing loops with machine input". Link to their demo version:

<https://homes.cs.washington.edu/~eaclark7/iui-demo/>

CrossTalk

Another apparently long-dead project, mentioned in the Scenejo paper and some others

From Scenejo paper: “CrossTalk [6] is described as a dialogue system for animated presentation agents using plan-based dialogue generation, as well as a corpus of pre-scripted scenes.”

From the SceneMaker paper: “CrossTalk is an interactive installation with animated presentation agents which “live” beyond the actual presentation and systematically step out of character within the presentation, both to enhance the illusion of life. The context memory enables the system to adapt to user feedback and generates data for later evaluation of user/system behavior.”

Dramatica

<http://dramatica.com/>

Mixed-initiative linear writing tool.

“Dramatica is the only writer's tool that can tell you things about your story you didn't tell it. You provide the idea—maybe a character sketch or two, perhaps even a hint of theme—and Dramatica helps you pull it all together into one cohesive powerful work. By offering you suggestions that mesh thematically with what you already have, Dramatica helps plug plot holes, solidifies character interactions and helps complete your story in such a way that it will resonate with your audience long after they've left the theater or long after they've put your book down.”

GADIN

Daniel Kudenko + Heather Barber / York Computer science. IRIS project

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Gadin>

IRIS project (download link in page).

Story-generation system based on calibrating some basic information fed by the human author to provide the end-user with an IDN end-product based on dilemmas and emerging conflict. As the author's work is minimal, this barely qualifies as mixed-initiative rather than story-generation, but the system was intended to be implementable for further domains and integrate more author personalization.

“The Generator of Adaptive Dilemma-based Interactive Narratives (GADIN) presented in this paper dynamically generates interactive narratives which are focused on dilemmas to create dramatic tension. The system is provided with knowledge of generic story actions and dilemmas based on those clichés

encountered in many storytelling domains. The domain designer is only required to provide domain specific information, for example regarding characters and their relationships, locations and actions. A planner creates sequences of actions that each lead to a dilemma for a character (who can be the user). The user interacts with the storyworld by making decisions on relevant dilemmas and by freely choosing their own actions. Using this input the system chooses and adapts future story lines according to the user's past behaviour. Previous interactive narrative systems often have content creation and ordering

requirements which restrict the possibility for sustaining the dramatic interest of the narrative over a long time period. In addition, many of these systems are not easily transferable between domains. In this paper the GADIN system is demonstrated to both be able to maintain the dramatic interest of generated narratives over a long time period and to have a core architecture which is applicable to any domain."

http://eprints.whiterose.ac.uk/47294/1/ieee_tcig.pdf

<https://ocs.aaai.org/Papers/AIIDE/2007/AIIDE07-001.pdf>

H., Kudenko, D. (2007). *Dynamic Generation of Dilemma-based Interactive Narratives*. Proceedings of the Artificial Intelligence and Interactive Digital Entertainment conference - AIIDE 2007. AAAI Press: Menlo Park, California.

Barber, Heather, and Daniel Kudenko. "Generation of dilemma-based interactive narratives with a changeable story goal." Proceedings of the 2nd international conference on INtelligent TEchnologies for interactive enterTAINment. ICST (Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering), 2008.

Barber, Heather, and Daniel Kudenko. "Generation of adaptive dilemma-based interactive narratives." IEEE transactions on computational intelligence and AI in games 1.4 (2009): 309-326.

MIL Story Writing Interface (& Slogan Writing Interface)

Clark, Elizabeth, et al. "Creative Writing with a Machine in the Loop: Case Studies on Slogans and Stories." 23rd International Conference on Intelligent User Interfaces. ACM, 2018.

Abstract: "As the quality of natural language generated by artificial intelligence systems improves, writing interfaces can support interventions beyond grammar-checking and spell-checking, such as suggesting content to spark new ideas. **To explore the possibility of machine-in-the-loop creative writing, we performed two case studies using two system prototypes, one for short story writing and one for slogan writing.** Participants in our studies were asked to write with a machine in the loop or alone (control condition). They assessed their writing and experience through surveys and an open-ended interview. We collected additional assessments of the writing from Amazon Mechanical Turk crowdworkers. **Our findings indicate that participants found the process fun and helpful and could envision use cases for future systems. At the same time, machine suggestions do not necessarily lead to better written artifacts. We therefore suggest novel natural language models and design choices that may better support creative writing.**"

Demo version: <https://homes.cs.washington.edu/~eaclark7/iui-demo/>

SayAnything

Swanson, Reid, and Andrew S. Gordon. "Say anything: A massively collaborative open domain story writing companion." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2008.

"We present a system where the user and computer take turns in writing sentences of a fictional narrative. Sentences contributed by the computer are selected from a collection of millions of stories extracted from Internet weblogs."

Swanson, Reid, and Andrew S. Gordon. "Say Anything: A demonstration of open domain interactive digital storytelling." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2009.

"Say Anything [4] is an open domain story generation engine that is unlike most other contemporary interactive storytelling systems. Say Anything diverges from current systems in two key areas. First, most state-of-the-art systems rely heavily on rich, 3D graphics to help engage the user with the story and virtual environment. However, similar to the early interactive storytelling systems such as TALE-SPIN [3], the virtual world in Say Anything is brought to life entirely through textual language. Second, in any interactive storytelling system there are two somewhat contradictory objectives: to maintain a strong coherent narrative and to allow the user the freedom to do anything they please. While the ultimate goal is to simultaneously achieve both, most compelling systems have focused on improving the narrative aspect by restricting the user's ability to interact with the world in various ways. Say Anything on the other hand emphasizes the ability for the user to create a narrative in any domain without any restrictions, other than the limits of a keyboard."

Swanson, Reid, and Andrew S. Gordon. "A data-driven case-based reasoning approach to interactive storytelling." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2010.

"Supporting human creative story authoring with a synthetic audience"

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1643

O'Neill, Brian, and Mark Riedl. "Supporting human creative story authoring with a synthetic audience." Proceedings of the seventh ACM conference on Creativity and cognition. ACM, 2009.

"Human creativity plays an important role in the production of many of the media products that permeate our society. However, non-expert creators are often limited by a lack of technical ability, as opposed to creative ability. This is especially true for story authoring. We present an approach to supporting creativity using a synthetic audience - an intelligent agent that acts as (a) a surrogate story

recipient and (b) critic capable of providing constructive feedback. We describe initial efforts based on computational modeling of cognitive processes and creativity.”

Tanagra

Smith, Gillian, Jim Whitehead, and Michael Mateas. "Tanagra: A mixed-initiative level design tool." Proceedings of the Fifth International Conference on the Foundations of Digital Games. ACM, 2010.

Abstract: “Tanagra is a prototype mixed-initiative design tool for 2D platformer level design, in which a human and computer can work together to produce a level. The human designer can place constraints on a continuously running level generator, in the form of exact geometry placement and manipulation of the level’s pacing. The computer then fills in the rest of the level with geometry that guarantees playability, or informs the designer that there is no level that meets their requirements. This paper presents the design of Tanagra, a discussion of the editing operations it provides to the designer, and an evaluation of the expressivity of its generator.”

WordsAnime

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1180

Sumi, Kaoru. "Interactive storytelling system using recycle-based story knowledge." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2009.

Abstract: “This paper describes an animation story generation system called WordsAnime, which uses recycle-based story knowledge. WordsAnime uses the animation database provided by animation consumer-generated media. A user generates a story by repeating the steps of inputting scenarios and viewing animations. WordsAnime extracts the story knowledge automatically while the user is operating the system. The system presents manual, semi-automatic, and fully automatic modes of creating scenarios using the story knowledge. This paper introduces recycle-based story knowledge and its current state through several trials involving a number of users.”

Writing Buddy

Samuel, Ben, Michael Mateas, and Noah Wardrip-Fruin. "The design of Writing Buddy: a mixed-initiative approach towards computational story collaboration." International Conference on Interactive Digital Storytelling. Springer, Cham, 2016.

Prototype at the time of publishing

Abstract: “The act of writing is often a difficult process; writing partners can be a way to test ideas, provide critiques, and overcome the difficulty of adding words to a blank page. Writing Buddy is an in-

development prototype of a mixed-initiative playful tool, intended to serve the role of a digital writing partner by combining the authoring affordances of writing software with the natural curiosity inherent in playable media. In it, players create and arrange dramatic beats to achieve certain story goals. Those dramatic beats are then satisfied through assigning character actions to them. Finally, players pen prose and dialogue to bring those actions to life. Writing Buddy aims to ease the authoring process by offering suggestions based on character simulation and story structure.”

“Authoring tools should be Mixed initiative system” tool presented at ICIDS 2017 (by David Piilard and a student)

*As this was presented during the authoring tools workshop, there’s no info in the ICIDS proceedings and I lack more on this.

C.VI – Web Portals - interactive content web-based portals \apps

Definition: Web portals that facilitate either the creation of interactive or hybrid\multimedia narrative works via a browser-based IDE, the publication and personalized consumption of such (interactive consumption of hybrid, remixed linear media), or both.

In some cases, the differences between these and the interactive video tools is quite blurry. I divided through the general assertion that if a tool is more focused on providing an environment for the consumption of interactive content than on facilitating the actual creation of narrative content, or if it’s more a multimedia production platform that is somehow related to narrative than a dedicated narrative platform, it goes on this list.

ADD TOOLS FROM ABOVE

Aesop story Engine – see journalistic tools above

StoryForm – see journalism tools above

IZI Travel (See audio tour AR tools above)

AngularJS – <https://angularjs.org/>

From i-Docs list: “A Javascript MVC framework created by Google to build properly architected and maintainable web applications – need to be able to code to use.”

“Why AngularJS?

HTML is great for declaring static documents, but it falters when we try to use it for declaring dynamic views in web-applications. AngularJS lets you extend HTML vocabulary for your application. The resulting environment is extraordinarily expressive, readable, and quick to develop.

Extensibility

AngularJS is a toolset for building the framework most suited to your application development. It is fully extensible and works well with other libraries. Every feature can be modified or replaced to suit your unique development workflow and feature needs. Read on to find out how.”

Duckling (formerly BlindSpot)

<https://www.duckling.co/>

HackaStory description: “Make micro stories with social media files. Turn those in a collective narrative. It’s all about sharing stories and making them together.”

“Duckling brings people together to tell stories about what they love.

1. SELECT AN INTEREST

Search for any interest, big or small, narrow or wide.

2. BROWSE PEOPLE & THEIR STORIES

Duckling shows you people, stories and media from across the internet.

3. TELL YOUR OWN STORIES

Mix it up to tell your story and make new connections.”

Multipop - <https://www.getmultipop.com/#intro>

Content enhancement tool geared for marketing\advertisement

“Multipop’s patented content delivery platform enables commerce, advertising, and engaging content to be added to any Omnichannel video strategy.

With our authoring platform it's as easy as 1-2-3...Make money!

Create your content 'pop', i.e. polling, merchandise, fun facts, etc.

Choose the video content and the time you want your content inserted

Deploy

Make more money!"

Steller

<https://steller.co/>

"Everyone has a story to tell.

Tell yours with photos, videos, and text."

HackaStory description: An app you can use to tell a story on social media through photo's, videos and text. Put them together and post your story.

The Written World - <http://www.thewrittenworld.co/the-game>

IF web-platform that possibly developed or were in the process of developing an authoring tool, includes some resources but appears abandoned.

From Deglaucy's list:

Tilda publishing - <http://tilda.cc>

Create beautiful websites and tell stories without any code with Tilda

450+ pre-designed blocks are ready for your web projects

We have come up with a new way of creating websites, where the process is similar to a game. Now everyone is a designer if they have passion for their business. It doesn't matter what — a business website, landing page, blog, portfolio or editorial special project — you make it quickly and easily with Tilda.

ReadyMag - <https://readymag.com>

With Readymag you can create any kind of web publications using only one tool: websites, magazines, photostories, portfolios, presentations

Stampsy - <https://stampsy.com/about>

A single place to share, curate and discover visual content that tells a story.

Atavist\Creativist - <https://atavist.com>

Write. Design. Publish. A powerful tool to tell stories and build websites. (Also included in video-making tools list)

“Atavist software enables you to quickly and easily tell your story through digital apps, ebooks, and magazines. It seamlessly integrates multimedia across mobile devices and the Web. Atavist lets you publish anything, everywhere.”

Storehouse Storytelling App – Visual storytelling

<http://www.businessinsider.com/storehouse-storytelling-app-update-2014-6?international=true&r=US&IR=T>

Android launch: <https://www.androidcentral.com/visual-storytelling-app-storehouse-makes-its-way-android>

Storehouse, a popular app for managing photo collections, has finally made its way to Android. The app, which received Apple's Design Award for its efforts on iOS in 2014, operates much like Google Photos' Collections feature, allowing users to create visual "stories" with their photos and videos.

Where things get interesting, however, is with the management of each album. You can customize the layout, adjusting and cropping photos as you go, to create visually appealing stories to share with friends. To spice things up, you can combine photos with videos and text to further flesh out your story. Once your story is complete, you can then share it with friends or family via direct link, email, or text.

From Submarine Channel: “Produced by a team led by former-Apple designer Mark Kawano, Storehouse is an App that turns your iPad into a visual storytelling tool with which you can share your life experiences through a blend of text and multimedia content. Launched last month, Storehouse was envisaged as a way for all of us to turn our daily iPhone snaps and journal entries into engaging, multimedia narratives.

What makes this app stand out is the UI and its gorgeous, intuitive design (Storehouse is surely one of the prettiest storytelling tools we've ever seen), all of which is perhaps little surprise considering Kawano's background. What's more the interface is easy-to-use and results can be produced quickly.”

Cowbird - <http://cowbird.com>

Cowbird is a public library of human experience.

You can browse 88,457 stories on 28,107 topics from 14,625 authors in 186 countries.

Heider-Simmel Interactive Theater

<https://hsit.ict.usc.edu/>

Webportal + tool for authoring linear, abstract, geometrical movies, and creating complementary textual narratives – for either one’s own or others’ creations - that interpret the depicted ‘social dynamics’ of the shapes/the meaning of the abstract narrative.

Gordon, Andrew S., and Melissa Roemmele. "An authoring tool for movies in the style of Heider and Simmel." International Conference on Interactive Digital Storytelling. Springer, Cham, 2014.

Abstract: Seventy years ago, psychologists Fritz Heider and Marianne Simmel described an influential study of the perception of intention, where a simple movie of animated geometric shapes evoked in their sub-jects rich narrative interpretations involving their psychology and social relationships. In this paper, we describe the Heider-Simmel Interactive Theater, a web application that allows authors to create their own movies in the style of Heider and Simmel’s original film, and associate with them a textual description of their narrative intentions. We describe an evaluation of our authoring tool in a classroom of 10th grade students, and an analysis of the movies and textual narratives that they created. Our results provide strong evidence that the authors of these films, as well as Heider and Simmel by extension, intended to convey narratives that are rich with social, cognitive, and emotional concerns.

The following 6 lists do not contain any tools in the main overview of IDN authoring tools, and are included, for various reasons, due to broader relevance to the field.

C.VII Prototypes\und~~er~~-developed tools

Definition: prototypes and beta systems that never developed into a fully operational authoring tools. Do not qualify for the main overview, but since prototypes can reveal a unique attempt or direction of thought on what an authoring tool could be, relevant projects are listed below.

Mostly academic projects are included thus far, from lists such as IRIS. This is partly due to the uninevitable bias of this list as an academic project itself. In addition, academic projects tend to do well at speculation and conceptualization, but do not always have the means, abilities, budget and\or sustained support over time to realize these visions

into an authoring tool. Academic projects are therefore more prone to producing prototypes worth listing than commercial projects, who have far less to gain from the prototype level, and who tend to treat never reaching the operational system level as an ultimate failure.

** Hills, Damian, Yusuf Pisan, and Ernest Edmonds. "Towards a generic framework for situated collaborative storytelling." *Proceedings of the 5th Australasian Conference on Interactive Entertainment*. ACM, 2008.

1. AdventureAuthor

http://judyrobertson.typepad.com/adventure_author/getting-started-with-adve.html

"The adventures of the Adventure Author team - computer game making in schools. Written by Judy Robertson, Keiron Nicholson and Cathrin Howells."

Mode of NeverWinter Nights 2 RPG map-builder, meant to facilitate classroom work of schoolchildren 10 and up. Seems dead since 2011, and not very interesting.

2. DraMachina

<http://www.irisa.fr/prive/donikian/articles/articleTIDSE04.pdf>

Research-prototype, dead for over 10 years. The paper and design ideology seem quite interesting though.

Writing Interactive Fiction Scenarii with DraMachina

Stephane Donikian 1 and Jean-Noël Portugal

jnportugal@daesign.com

<http://www.daesign.com>

This paper presents DraMachina, an authoring tool dedicated to authors of interactive fictions. [...]. With DraMachina, we propose an authoring tool dedicated to the description of narrative elements composing an interactive fiction. It also automatize the exchange of information between writers and production teams.

IRIS project

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Dramachina>

"Availability

Dramachina is a research prototype provided on a as-is basis - meaning it is not maintained. However it can be obtained for research purposes by sending a message to donikian @ irisa.fr.

Technical Description

DraMachina is an authoring tool dedicated to the description of narrative elements composing an interactive fiction. It was developed at INRIA during a collaborative project partnership between IRISA and the Daesign company and was partially funded by the RNTL (French National Network for Research and Innovation in Software Technology) for two years up until march 2003.

DraMachina is an interactive application using mainly text edition. Authors of classical linear stories can write the (interactive) story, including character descriptions and linear dialogue edition. A scenarist of an interactive fiction can also describe the skeleton of a story at different levels (period, act, scene, action) and specify relations between these elements. He can freely specify a more complete dialogue structure including user choices and branching depending on specific parameters.

As summarized by Marie-Laure Ryan (1997), different architectures are possible for an interactive fiction, we decided not to make a choice between these possible architectures, but to let authors writing stories make the choice by providing a low constrained approach.

The main window allows authors to access the story elements, and is structured by using the file/directory metaphor. The main elements are:

- Authors directory: each author can enter his own reference;
- Narration directory: this directory includes acts, periods, dramatic actions and units description;
- Objects directory: description of objects important in the course of the story;
- Areas directory: description of locations of the story;
- Actors directory: this directory includes elements related to the description of characters, which is composed of their characteristics, psychology, actions they can perform, roles they can play and relationships between actors;
- Scenes directory: detailed description of scenes;
- Dialogues directory: dialog edition based on protodialog patterns

This logical description is based on a structural analysis, not only of drama but also of film morphology. It allows the author to set up a series of criteria which will determine a virtual director's cut each time the interactive fiction is performed. For example, a Scene object is logically described as the combination of current setting / actors on stage / Dramatic Action currently going on / and present state of the Dramatic Units map. Entrance of a character, change of Dramatic Action... will automatically change the Scene Object and thus its parameters such as Mood / Ambience, Level of Formality, Rythm of Action, Actions Allowed, etc.

Dramatic units mark the evolution of the narration. They can be validated by different events as dramatic actions, dialogues or relationship evolutions. These elements are then associated to dramatic units by declaring logical formulas which are preconditions or implications of the dramatic units, such as

the Bremond logical model. Links between nodes of the drama unit map are then extracted from these logical formulas and a drama map can be constructed.

Psychological description of characters is a delicate and important point. In DraMachina we decided to focus on strokes. Each stroke has an impact which could be either positive (caress) or negative (blow), and a duration on the receiver. Declaring strokes that characters received before the start of a story helps to represent the characters' initial psychological state. We decomposed it in a description, a duration value from seconds to whole life and an impact value from traumatism to happiness. Other characteristics could be given to complete the description of an actor, such as the speaking and listening focus, the accepted distance to other people in a discussion, the normal walking speed. We can also describe lists of actions and roles that the actor will be able to perform.

The protodialog edition window is a graph based structure including nodes, arcs and three kinds of branching - binary, ternary and unbounded. Protodialogs are used to characterize different dialog structures. Branching nodes can either correspond to a conditional expression on variables of the story or a question/answer interaction phase with spectators. All classical style characteristics can be specified for each element of the graph. No specific protocol is defined, it is of the responsibility of the development team to define its own writing protocol with the author. A dialog structure is then based on one of the protodialogs available. A dialog is also defined by its protagonists and each node of the protodialog can correspond to a sequence of one's lines.

The internal file format is expressed in XML. We have chosen XML as it gives easily the possibility to export data to other applications. During the DOM tree generation process, an optional functionality can be used which consists in syntactic and semantic analysis of phrases. The result consists in a decomposition of each character's action into several parameters: nature, manner, source and target of the action. Verbs are classified in different categories (action, dialog, motion) by using available corpus. These data can be very interesting to integrate in an action databasis, and permit to extract informations about actions that can be performed by each of the characters.

Strong Points

DraMachina offers a consistent management of the different dramatic elements from the author point of view. Additionally, transcripts of an author's results can be automatically transferred to the development team.

Limitations

The main limit of the tool is that it is an unfinished prototype. Due to the interface complexity several man months are required to either extend or redevelop the tool.

Donikian, S. (2006). De l'écriture à la réalisation d'une fiction interactive : simplification de la chaîne allant de la création à l'adaptation. Chapter of the book « Créations de récits pour les fictions interactives », Hermès, October 2006.

Donikian, S. & Portugal, J.N. (2004). Writing Interactive Fiction Scenarii with DraMachina. Technologies for Interactive Digital Storytelling and Entertainment, Lecture Notes in Computer Science, Volume 3105, pp 101-112, Springer-Verlag.

Donikian, S. (2003). DraMachina: an authoring tool to write interactive fictions. TIDSE'03, 1st International Conference on Technologies for Interactive Digital Storytelling and Entertainment, Darmstadt, Germany, March 2003.

Academic Tools from the IRIS publication list

Unsorted for now. The vast majority are dead, and were the subject of a single paper. potentially combine relevant ones into the main overview.

“An Authoring Environment for Structuring Non-Linear Interactive Narratives”

Schneider, Oliver, Norbert Braun, and Gregor Habinger. "Storylining suspense: An authoring environment for structuring non-linear interactive narratives." (2003).

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1688

“A Story Authoring System for Children”

http://iris.ofai.at:7777/iris_db/index.php/publications/show/676

Wang, Danli, et al. "A story authoring system for children." International Conference on Technologies for E-Learning and Digital Entertainment. Springer, Berlin, Heidelberg, 2009.

Abstract: “Storytelling is a practical and powerful tool for children to develop their language expression and creativity. Many researchers have studied and built storytelling systems for children. Based on the analysis on the existing work, we designed and developed a 3D story authoring system for children by using pen/speech-based multimodal interaction technology. The system allows children to create roles, design roles' actions, make and share their own stories. The aim of this system is to cultivate the imagination and creativity of children, and to improve their language expression.”

“Authoring environment for ShapeShifting Screen Media Prodcution”

http://iris.ofai.at:7777/iris_db/index.php/publications/show/480

Ursu, Marian Florin, et al. "Authoring Environment for ShapeShifting Screen Media Productions." AIIDE. 2007.

Abstract: "We define ShapeShifting programmes as interactive and reconfigurable moving image productions that adapt their content, on the fly, to suit the preferences of the viewers or engagers. They are automatically edited at the time of delivery. We have developed a paradigm, a computational model and an accompanying software system for the creation and delivery of ShapeShifting Screen Media programmes. These are all generic - genre and production independent. They employ AI techniques including: logic programming, ontologies, symbolic representations, normative statements, and constraint satisfaction heuristics. This paper outlines the Authoring Environment component of the aforementioned software system."

Related piece (at least in the 'ShapeShifting media' terminology): Williams, Doug, et al. "Experiments with the production of ShapeShifting media: Summary findings from the project NM2 (New Millennium, New Media)." International Conference on Virtual Storytelling. Springer, Berlin, Heidelberg, 2007.

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1030

Explores 8 sample projects.

AIPaint: a sketch-based behavior tree authoring tool

http://iris.ofai.at:7777/iris_db/index.php/publications/show/299

Abstract: "Current behavior authoring tools force game designers to split their attention between the game context and the tool context. We have addressed this problem by developing a behavior authoring tool that merges these two contexts. This paper outlines the design and implementation of a game-independent behavior tree authoring tool, called AIPaint, that allows a designer to create and edit behavior trees via a natural sketching interface overlaid on the game world. We demonstrate the use of AIPaint to author computer-controlled characters in two simple games and report on an observational evaluation."

AAAI paper by David Bercroft, Jesse Bassett, Adrian Mejia, Charles Rich and Candence Sidner

Dextor

http://iris.ofai.at:7777/iris_db/index.php/publications/show/326

Talbot, Thomas B., et al. "Sorting out the virtual patient: how to exploit artificial intelligence, game technology and sound educational practices to create engaging role-playing simulations." International Journal of Gaming and Computer-Mediated Simulations (IJGCMS) 4.3 (2012): 1-19.

"A growing issue in the development of realistic and entertaining interactive games is the need for mechanisms that support ongoing natural language conversation between human players and artificial non-player characters. Unfortunately, many methods for implementing natural language generation (NLG) induce a significant burden on the author, do not scale well, or require specialized

linguistic knowledge. We formalize the notion of typed-templates, an extension of standard structures employed in template-based NLG. We further provide novel algorithms that, when applied to typed-templates, ameliorate the above issues by affording computational support for authoring and increased variation in utterance and scenario generation. We demonstrate the efficacy of typed-templates and the algorithms through a user study.”

DIRACT

http://iris.ofai.at:7777/iris_db/index.php/publications/show/561

Cai, Yundong, et al. "DIRACT: Agent-Based Interactive Storytelling." Web Intelligence and Intelligent Agent Technology (WI-IAT), 2010 IEEE/WIC/ACM International Conference on. Vol. 2. IEEE, 2010.

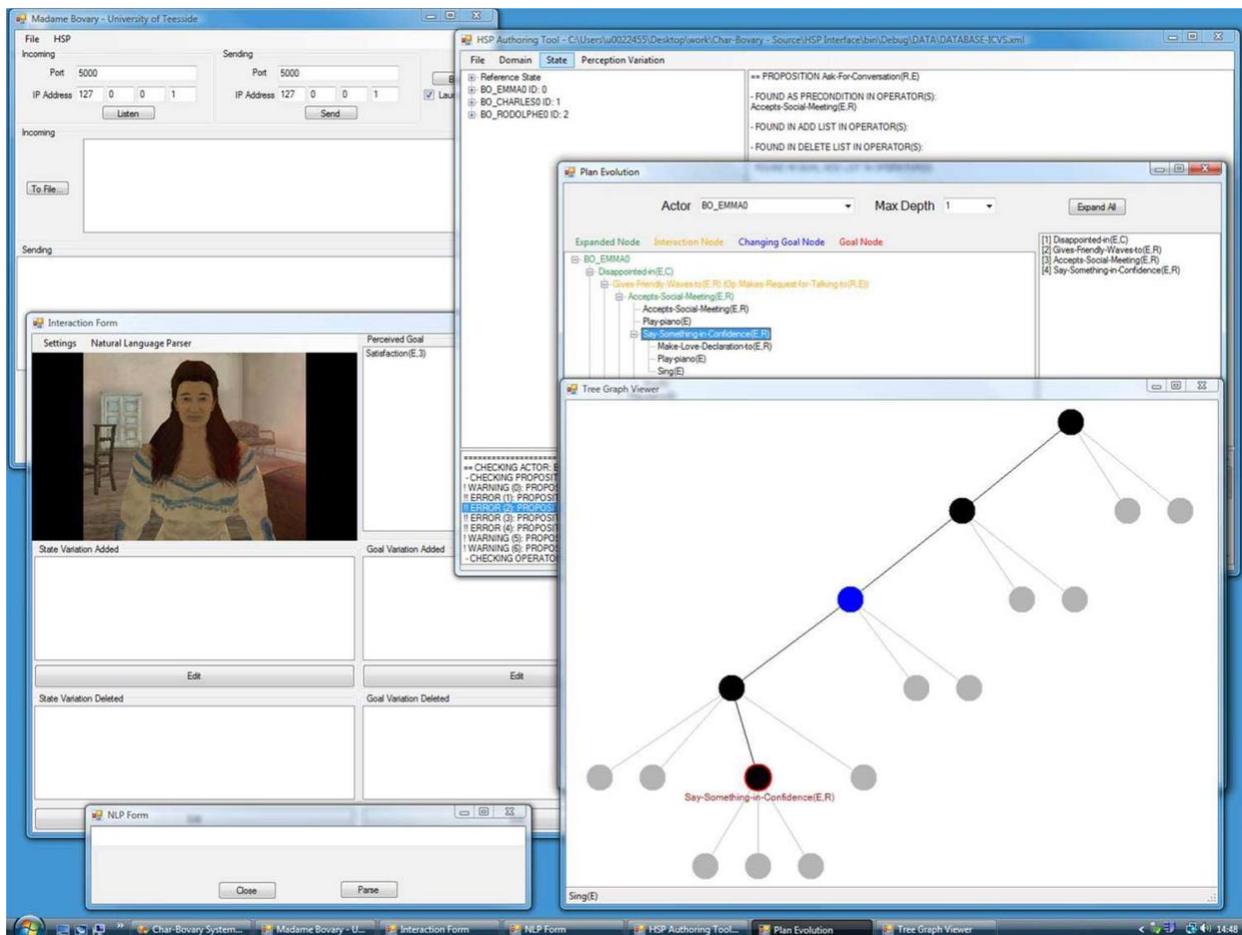
Abstract: “A lot of researches haven been done on the interactive storytelling authoring, e.g. by a director agent, or by interactions among a number of character agents. However, it is still difficult to construct the interactive storytelling for novice users, due to a need of various agents development and complex communication among the agents. We propose an agent-based interactive storytelling architecture, namely DIRACT (short of "Direct and Act"). It is composed of numerous atomic DIRACT agents, which are goal oriented and use an unified communication protocol. By removing the difference between the director and character, each DIRACT agent can either direct or act the story in real-time. As a result, it is scalable to story complexity, reusable for inheritance and makes the interactive storytelling authoring much easier.”

EMOEMMA

<http://redcap.interactive-storytelling.de/authoring-tools/emo-emma/>

“Combined with ontology of characters’ feelings, our latest work on character-based affective Interactive Storytelling aims at reconciling both generation and visualisation philosophies and uses a real-time Heuristic Search Planner (HSP) [Bonet and Geffner, 1999] to generate characters’ actions consistent with their psychology and allowing anytime user interactions [ACII2007] [AAMAS2009].

[Bonet, B., and Geffner, H.: Planning as heuristic search: new results. In: Proceedings of the European Conference on Planning (ECP’99), pp. 360--372 (1999)]



Our authoring environment (as shown above) has been developed subsequently to our proof-of-concept prototypes of emotional planning for IS. Its rationale was to support the authoring of a complex planning domain, by checking its completeness and its consistency. However, since this authoring tool was an interface to the narrative formalism itself [TIDSE06], and that the narrative formalism determined entirely the interactive narrative, it became a candidate for a more generic approach to authoring and authoring methods [ICIDS08]. The integration of new modules could support the collaboration between authors and developers in designing an interactive narrative.

The authoring tool is available for download here and its user documentation is downloadable from here. Note that it requires the Microsoft .NET Framework Version 2.0 Redistributable Package to work, which you can download from here."

Charles, Fred, et al. "Emoemma: Emotional speech input for interactive storytelling." Proceedings of The 8th International Conference on Autonomous Agents and Multiagent Systems-Volume 2. International Foundation for Autonomous Agents and Multiagent Systems, 2009.

EmoHawk

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1181

Brom, Cyril, et al. "Emohawk: searching for a "Good" emergent narrative." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2009.

Abstract: "We report on the progress we have achieved in development of Emohawk, a 3D virtual reality application with an emergent narrative for teaching high-school students and undergraduates the basics of virtual characters control, emotion modelling, and narrative generation. Besides, we present a new methodology, used in Emohawk, for purposeful authoring of emergent narratives of Façade's complexity. The methodology is based on massive automatic search for stories that are appealing to the audience whilst forbidding the unappealing ones during the design phase."

Bída, Michal, and Cyril Brom. "Emohawk: learning virtual characters by doing." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2010.

"Emohawk is a narrative-based serious game designed to be a supportive tool for teaching basics of virtual agents development at universities and high-schools. Emohawk is built utilizing a free version of Unreal Engine 2 and it features an interactive scenario with four virtual agents controlled by an appraisal-driven architecture playing out a story approximately 5-10 minutes long. Students are engaged in solving game-based tasks with increasing complexity and simple programming tasks related to various parts of the virtual agents curricula. The Emohawk distribution includes documentation, graphical debugging tools and tutorials."

ENIGMA

<http://redcap.interactive-storytelling.de/authoring-tools/enigma/>

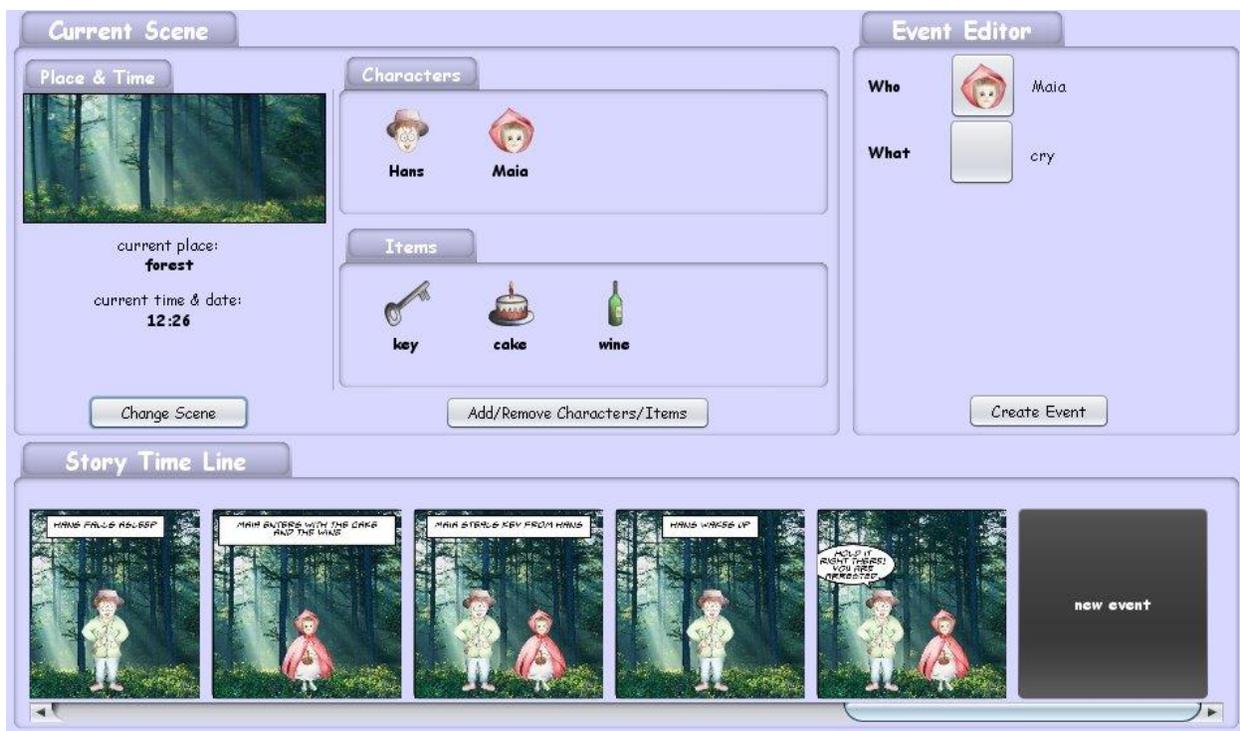
"Enigma is an experimental platform for collaborative authoring of the behaviour of autonomous virtual characters in interactive storytelling applications. It originated from our experience in creating character driven interactive storytelling applications like FearNot! [1] in the EU FP6 project ECircus without any supporting authoring technology. The main idea is to overcome the bottleneck of knowledge acquisition that exists in generative interactive storytelling systems through a combination of crowd-sourcing and machine learning.

A client application which can be run directly from the browser allows contributors, who are invited by a principal author (PA) to create/tell a little story within a predefined story universe, e.g. the Little Red Riding Hood Universe. Every story that gets created within this client application will be submitted to a server where many of these stories are collected and processed by machine learning algorithms to infer generative character models that can be used to drive a virtual actor within an interactive drama. These virtual characters can also run in the background while a story is created in the client. This allows the characters to make suggestions at certain points in the story (more about this in [2] and [3]).

User-friendliness of the authoring client is deemed very important if many contributors are expected to be mobilised. Although the end goal is the creation of a database of symbolic story knowledge, we assume that providing this knowledge ex- and implicitly in the process of telling stories will be easier for invited contributors than editing it directly. We however still have to verify this hypothesis through a series of experiments.

For the same reason (user friendliness and appeal) we have decided against a purely text based tool. Instead we opted for visualisation through a comics generation system [4]. Originally we planned to use a 3D graphics authoring interface, but later found that the comics system is a better choice. Using it allows us to have a thin authoring client (The comics are generated on the server side, a URL to the generated picture is returned) that can be easily distributed. Also, we need to represent event sequences within the authoring tool. With the way they are structured (1 panel = 1 event), comics provide a good mechanism for doing that. Finally this form of visualisation allows for uncomplicated graphics content generation independent of any specific tools (characters are represented by a series of annotated head and body pictures, scenes are simply panoramic pictures).”

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1260



Kriegel, Michael, and Ruth Aylett. "Crowd-sourced AI authoring with ENIGMA." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2010.

“ENIGMA is an experimental platform for collaborative authoring of the behaviour of autonomous virtual characters in interactive narrative applications. The main objective of this system is to overcome the bottleneck of knowledge acquisition that exists in generative storytelling systems through a

combination of crowd-sourcing and machine learning. While the authoring front-end of the application is used to create short example stories set in a specific story domain, the server side of the application collects many of those stories and derives behaviour models for autonomous virtual characters such as formal planning operator descriptions from them. A mixed initiative mode increases coherence by feeding already learnt character behaviour back into the client.”

Erasmatron

http://iris.ofai.at:7777/iris_db/index.php/publications/show/68

Crawford, Chris. "Assumptions underlying the Erasmatron interactive storytelling engine." *AAAI Fall Symposium on Narrative Intelligence*. 1999.

Abstract: “The Erasmatron engine presents an unconventional approach to the problems of interactive storytelling design. The underlying cause of its peculiarity is the set of unconventional assumptions from which it was built: 1. While architecturally valid stories can be created by algorithm, humanly interesting stories can be created only by artists. 2. The battle between character-based stories and plot-based stories can be elegantly resolved by recourse to verb-based stories. 3. Interactivity is central to the design of computer storytelling systems. 4. A high threshold of complexity must be crossed to obtain reasonable results.”

Tool presented in “From Debugging to Authoring: Adapting Productivity Tools to Narrative Content Description”

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1162

Pizzi, David, and Marc Cavazza. "From debugging to authoring: Adapting productivity tools to narrative content description." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2008.

(ICIDS 2008)

Abstract: “Recent progress in Interactive Storytelling has been mostly based on the development of proof-of-concept prototypes, whilst the actual production process for interactive narratives largely remains to be invented. Central to this effort is the concept of authoring, which should determine the relationships between generative technologies underlying Interactive Storytelling engines, and the actual description of narrative content. In this paper, we report the development of an authoring technology on top of a fully-implemented Interactive Storytelling system. Although this system originated as a debugging tool for a Planning system, its interactivity as well as the high-level nature of the formalism it manipulates makes it a candidate to support collaboration between authors and technologists.”

Generic framework for situated collaborative writing\assimilate tangible inteface

See gestural interface below.

LinearLogic

<http://redcap.interactive-storytelling.de/authoring-tools/linearlogic/>

“Our architecture is based on two components: an Interactive Storytelling rendering and an Interactive Storytelling controller.

The controller aims to manage the unfolding of the history by taking into account the player actions and according to the structure of the narrative pre-defined. The controller is based on a computational model of Interactive Storytelling: Linear Logic. We adapt Greimas analysis to the constraints of Interactive Storytelling.

Greimas was the first to develop narrative formalism as an abstract formula to represent an action (narrative program). He proposed to define an action as a transition from one state to another state where the subject gains or loses an object (conjunctive or disjunctive narrative program).

Linear Logic has been introduced by J.-Y. Girard as a restriction of classical logic. Unlike classical logic, Linear Logic is not used to determine whether an assertion is true or not but rather the validity of how formulas are used (and then consumed) when proving an assertion. Linear Logic is well suited to derive a computational model to partially ordered problems with resource sharing.”

Dang, Kim Dung, and Ronan Champagnat. "An authoring tool to derive valid interactive scenarios." Intelligent Narrative Technologies 6 (INT6), Ninth Annual AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment-AIIDE'13. 2013.

Dang, Kim Dung, et al. "How authors benefit from linear logic in the authoring process of interactive storyworlds." International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2011.

Abstract: “We present a case study of interactive story creation, in which we applied a proof mechanism based on Linear Logic to the authoring process. After initial scenario modeling for dynamic plot generation based on planning, we used the mechanism in iterations of refinements to find possible problems within a huge possibility space of resulting discourses. We describe first results of our case study, discuss prospects and limitations and point out future work.”

At 2011 they implemented their ideas with EmoEmma, in 2013 they present their own tool for interactive-authoring based on linear logic.

Mindstage

Nitsche, Michael, and Paul Richens. "Telling stories through space: the mindstage project." International Conference on Technologies for Interactive Digital Storytelling and Entertainment. Springer, Berlin, Heidelberg, 2006.

Abstract: "Mindstage is a real-time multi-user 3D virtual environment used to explore the relationships between a linear story and the virtual world in which it unfolds. The prototype uses as its narrative spine an illustrated lecture on film design by Christopher Hobbs. It provides a stage for interaction featuring a customized 3D environment based on this material, with the necessary actors and objects in it. The main design issues were mapping the linear talk onto the virtual space, and the implementation of various interactive features within it. We argue that a careful use of spatial design supports a degree of non-linear story-telling without compromising the core linear content."

ScriptEase

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1665

Cutumisu, Maria, et al. "ScriptEase: A generative/adaptive programming paradigm for game scripting." Science of Computer Programming 67.1 (2007): 32-58.

Not a full authoring tool, but an intervention in the coding of character interaction meant to simplify the process.

Abstract: "The traditional approach to implementing interactions between a player character (PC) and objects in computer games is to write scripts in a procedural scripting language. These scripts are usually so complex that they must be written by a computer programmer rather than by the author of the game story."

Textable Movies

http://iris.ofai.at:7777/iris_db/index.php/publications/show/993

Vaucelle, Catherine, Glorianna Davenport, and Tristan Jehan. "Textable Movie: improvising with a personal movie database." ACM SIGGRAPH 2003 Sketches & Applications. ACM, 2003.

Abstract: "This paper presents Textable Movie, an open-ended interface that allows anyone to become "video-jockey." In the framework of computational storytelling, Textable Movie promotes the idea of maker controlled media and can be contrasted to automatic presentation systems. Its graphical interface takes text as input and allows users to improvise a movie in real-time based on the content of what they are writing. Media segments are selected according to how the users label their personal audio and video database. As the user types in a story, the media segments appear on the screen, connecting writers to their past experiences and inviting further story-telling. By improvising movie-stories created from their personal video database and by suddenly being projected into someone else's

video database during the same story, young adults are challenged in their beliefs about other communities.”

“(A) Toolkit for Authoring Non-linear Storytelling Environments Using Mixed Reality”

http://iris.ofai.at:7777/iris_db/index.php/publications/show/991

Abawi, Daniel F., Silvan Reinhold, and Ralf Dörner. "A Toolkit for authoring non-linear storytelling environments using mixed reality." International Conference on Technologies for Interactive Digital Storytelling and Entertainment. Springer, Berlin, Heidelberg, 2004.

Abstract: “Efficient creation of high-quality Mixed Reality (MR) content is challenging today due to a variety of difficult problems not only on a technological level. As a consequence, authoring problems prevent a more widespread usage of MR in digital storytelling. We present a novel authoring toolkit that allows an efficient integration of MR technology in various interactive non-linear storytelling applications. We demonstrate its usage in an example use case that represents typical MR-related authoring tasks like the calibration of real and virtual objects or the specification of their semantic relationship. As a peculiarity, a seamless provision of the MR authoring toolkit together with the storytelling application is conceptually and technically supported. Thus, we show how authors, even without technical background, who want to create MR-enriched storytelling experiences, can be adequately supported. The underlying concepts for an efficient implementation of our proposed authoring toolkit are briefly described.”

Video Puppetry

Abstract: “We present a video-based interface that allows users of all skill levels to quickly create cutout-style animations by performing the character motions. The puppeteer first creates a cast of physical puppets using paper, markers and scissors. He then physically moves these puppets to tell a story. Using an inexpensive overhead camera our system tracks the motions of the puppets and renders them on a new background while removing the puppeteer’s hands. Our system runs in real-time (at 30 fps) so that the puppeteer and the audience can immediately see the animation that is created. Our system also supports a variety of constraints and effects including articulated characters, multi-track animation, scene changes, camera controls, 2.5-D environments, shadows, and animation cycles. Users have evaluated our system both quantitatively and qualitatively: In tests of low-level dexterity, our system has similar accuracy to a mouse interface. For simple story telling, users prefer our system over either a mouse interface or traditional puppetry. We demonstrate that even first-time users, including an eleven-year-old, can use our system to quickly turn an original story idea into an animation.”

Barnes, Connelly, et al. "Video puppetry: a performative interface for cutout animation." ACM Transactions on Graphics (TOG). Vol. 27. No. 5. ACM, 2008.

http://delivery.acm.org/10.1145/1410000/1409077/a124-barnes.pdf?ip=145.107.79.59&id=1409077&acc=ACTIVE%20SERVICE&key=0C390721DC3021FF%2E4AD871FF6AD78CEE%2E4D4702B0C3E38B35%2E4D4702B0C3E38B35&acm=1523399085_7412c24cafd2ad74024bfa7dfc41533

WeQuest

See 'dead AR tools' above.

WordsAnime

http://iris.ofai.at:7777/iris_db/index.php/publications/show/1180

Sumi, Kaoru. "Interactive storytelling system using recycle-based story knowledge." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2009.

Abstract: "This paper describes an animation story generation system called WordsAnime, which uses recycle-based story knowledge. WordsAnime uses the animation database provided by animation consumer-generated media. A user generates a story by repeating the steps of in-putting scenarios and viewing animations. WordsAnime extracts the story knowledge automatically while the user is operating the system. The system presents manual, semi-automatic, and fully automatic modes of creating scenarios using the story knowledge. This paper introduces recycle-based story knowledge and its current state through several trials involving a number of users."

AR\MR prototypes

Ingress Mission Creation Tool

<http://mission-author-dot-betaspire.appspot.com/>

Still in limited release. Referenced by Kampa.

1. Magic Bench

<https://www.disneyresearch.com/publication/magic-bench/>

By Disney Research

McIntosh, Kyna, et al. "Magic bench: a multi-user & multi-sensory AR/MR platform." ACM SIGGRAPH 2017 VR Village. ACM, 2017.

Abstract: “Mixed Reality (MR) and Augmented Reality (AR) create exciting opportunities to engage users in immersive experiences, resulting in natural human-computer interaction. Many MR interactions are generated around a first-person Point of View (POV). In these cases, the user directs to the environment, which is digitally displayed either through a head-mounted display or a handheld computing device. One drawback of such conventional AR/MR platforms is that the experience is user-specific. Moreover, these platforms require the user to wear and/or hold an expensive device, which can be cumbersome and alter interaction techniques.

We create a solution for multi-user interactions in AR/MR, where a group can share the same augmented environment with any computer generated (CG) asset and interact in a shared story sequence through a third-person POV. Our approach is to instrument the environment leaving the user unburdened of any equipment, creating a seamless walk-up-and-play experience. We demonstrate this technology in a series of vignettes featuring humanoid animals. Participants can not only see and hear these characters, they can also feel them on the bench through haptic feedback. Many of the characters also interact with users directly, either through speech or touch. In one vignette an elephant hands a participant a glowing orb. “This demonstrates HCI in its simplest form: a person walks up to a computer, and the computer hands the person an object.”

VR Prototypes

VR Toolkit/VR Tuner

http://iris.ofai.at:7777/iris_db/index.php/publications/show/992

Wages, Richard, Benno Grützmacher, and Stefan Conrad. "Learning from the movie industry: Adapting production processes for storytelling in VR." International Conference on Technologies for Interactive Digital Storytelling and Entertainment. Springer, Berlin, Heidelberg, 2004.

Abstract: “Any movie production needs a whole group of contributing authors and creative artists from various fields. The same should obviously be true for the making of a compelling VR scenario. Hence artists need to have direct access to the VR production process itself. In the VR domain however artistic and computational challenges are usually still severely interwoven. Thus nearly all of the (art) work is currently done by computer experts due to the unstructured workflow and the lack of creative tools for authors. In this paper we present two novel tools which we developed to adopt movie production procedures namely the VR Authoring Tool and the VR Tuner. The first is a tool to create a nonlinear screenplay and storyboard analogue to the beginning of every movie production. The second tool, the VR Tuner, facilitates editing and post-production of VR scenarios for the first time. We conclude with a brief description of our experiences during a first evaluation of the tools.”

Interactive Video prototypes

The Break Up

By Ian Forrester & Anna Frew (employed by the BBC)

Object-based broadcasting (algorithmically “remixable” video\audio tracks)

Abstract: “A contribution to Interactive Digital Storytelling is made through prototype The Break Up a film short for online TV and video using Object-Based Broadcasting. The prototype can change its music, video and color grade when informed by implicit interaction. This paper evaluates whether a music genre expected to suit the participant enhanced their experience. [...] The prototype tested showed it was capable of automatically compositing media objects in response user context, combined with a positive reception to implicit personalization this indicates potential for further work.”

Riders project tools

“RIDERS stands for Research in Interactive Drama Environments, Role-play and Storytelling. The project was funded by EPSRC until April 2015. The project is now closed. This website is no longer being updated but remains as a legacy of IS information.

RIDERS built a network community of interactive digital storytelling experts in the UK and abroad. Our experts attended various IS workshops and events with different themes/focus, held throughout the UK. Our members were diverse; from drama, to computer programming, to live action role play. THANK YOU ALL for joining RIDERS and helping to bridge current barriers across discipline. Your interest and input in our interactive storytelling events made for a very successful project.

We encourage academics and those working in the creative and entertainment industries within interactive digital storytelling to keep collaborating - let ongoing sparks of synergy continue to grow between technological development, theoretical analysis and practitioner results. For any follow up questions about RIDERS, please contact Professor Ruth Aylett.”

<http://www.riders-project.net/research/systems-tools/>

This page contains the list and a download link for most tools.

IEQUALSI

Developed in 2002 and seems like it never got past Alpha phase. Completely dead, not much info.

<https://www.openhub.net/p/iequals>

<https://iequalsi.soft112.com/>

“iequalsi offers virtual environment with experimental interface and interaction models. Merging multiuser environments with story-telling engines, wireless clients, and emotible user representations.”

OpenEar

“openEAR is the Munich Open-Source Emotion and Affect Recognition Toolkit developed at the Technische Universität München (TUM). It provides efficient (audio) feature extraction algorithms implemented in C++, classifiers, and pre-trained models on well-k.” (Dead link, no extra info)

“EMERGENT NARRATIVE, DISTRIBUTED DRAMA MANAGEMENT”

Ruth Aylett

No further info on site – unclear if this is actually a tool or just a concept Aylett repeatedly deals with that’s on the wrong list, or a paper on FearNot!

See below:

ASAPS (Hartmut Koenitz)

FearNot! (Ruth Aylett) & FATiMa

HypeDyn (Alex Mitchell)

IDTension (Nicolas Szilas)

Passage (David Thue)

OpenStories\Fabulist (Mark Riedl)

StoryTron (Chris Crawford)

The Virtual Storyteller (Jeroen Lissens & Thomas De Groot)

Academic procedural generation tools (partial list)

Defacto

Thespian

The Virtual Storyteller

ISRST-IS

Mimesis
ACTAFFECT

DINAH - DYNAMIC, INTERACTIVE, NARRATIVE AUTHORING HEURISTIC

Fabulist\OpenStories

PaSSAGE

SayAnything

*Finish IRIS academic paper list

*All ICIDS conferences

*Make sure all IRIS projects are included here

C.VIII - Historical tools

Definition: This list includes tools released on or prior to 1998, organized by type (in accordance with the other lists in this project) and chronology. These tools have long become technologically obsolete in the rapidly developing digital ecology, but carry strong historical importance and influenced the design and interface of contemporary tools.

I choose 1998 as the (inevitably somewhat arbitrary) cut-off point, as the year symbolizes both the first high-functioning version of the PC interface, with Windows 98, and the true invasion of the internet into mass-culture.

Most sub-lists in this category are highly partial at the moment, and contain only the most well known and crucial projects to the development of their category of IDN.

Interactive Fiction

Scott Adams\Adventure international

https://en.wikipedia.org/wiki/Adventure_International

[https://en.wikipedia.org/wiki/Scott_Adams_\(game_designer\)](https://en.wikipedia.org/wiki/Scott_Adams_(game_designer))

IF adventure game company that existed between 1978-1985, run by Adams. The 'Scott Adams' format is still remembered today by many in the IF community (see Scottkit). Best known game: AdventureLand (1978).

ZIL – not quite a tool, but a language developed by Infocom in the 80s to create most of their pivotal adventure game. The ZMachine is an interpreter developed to run them (and other IF formats), which inspired the creation of the Gargoyle interpreter. ZILF (see below) imports the language's logic for modern platforms.

Wander

<https://bluerenga.wordpress.com/2015/04/23/wander-1974-release-and-questions-answered/>

“There is a text adventure creation system that dates back to before Crowther wrote ADVENT.”

Adventure Writing Kit

An adaptable version of Adventure/Colossal Cave Adventure (AKA ADVENT)– the very first IF work, published in 1976. Sort of a proto-authoring tool, allowing programmers to personalize\mod the IF game.¹

A generic version of the game was developed in 1981 by Graham Thomson for the ZX-81 as the *Adventure-writing kit*. This stripped-down version had space for 50 rooms and 15 objects and was designed to allow the aspiring coder to modify the game and thus personalize it. The game's code was published in April 1982.

https://en.wikipedia.org/wiki/Colossal_Cave_Adventure

Dog Star Adventure

Similarly, “in the May 1979 issue of SoftSide magazine, **Lance Micklus published the BASIC code to his Dog Star Adventure**, which would go on to become the sturdy framework for tens of thousands of similar games created in bedrooms, high-school computer labs, and home offices, most of which never traveled much further than the computer used to create them. There followed heaps more magazine

¹ Much of the early history is owed to Infocom and its various games and proto-house-engines. Infocom is extensively covered in the IF docu Get Lamp (Jason Scott)

Get Lamp

<http://www.getlamp.com/>

Scott's Infocom: the documentary

<https://www.youtube.com/watch?v=OXNLWY7rwH4>

listings of BASIC-based text adventures, many of them based on Micklus's original, along with enough books on the crafting of them to fill a long library shelf."

<https://www.filfre.net/2016/08/agt/>

Eamon

Donald Brown began to distribute Eamon, a construction set for "adventure scenarios" that combined elements of text adventures and CRPGs in a way that strikes us as stranger today than it did players back in **1979**, when genres were still in flux and the lines between the largely deterministic adventure game and the largely emergent CRPG had not yet been clearly demarcated.

<https://www.filfre.net/2011/09/eamon-part-1/>

The Adventure System

"In 1982, Allan Moluf and Bruce Hanson released The Adventure System, an authoring system for new games that used the now well-documented Scott Adams format."

<https://www.filfre.net/2016/08/agt/>

GAGS – Generic Adventure System

A precursor to AGT, developed by Mark J. Welch and released in 1985 as shareware.

<https://www.filfre.net/2016/08/agt/>

Alan

<http://www.ifwiki.org/index.php/Alan> - released 1985 (see above)

An acronym for Adventure LANguage, **Alan** is an **authoring system** designed to make it easier for people unfamiliar with programming to write IF, or text-adventure games. It was created by **Thomas Nilsson** and **Göran Forslund** in 1985 and is continuously updated and maintained by **Thomas Nilsson**.

The language features a self-documenting, English-like syntax, possibly inspired by COBOL, and several built-in classes of objects commonly used in IF. Version 3 of Alan comes with complete object orientation, inheritance and an extensive library. It supports author defined player syntax and input checks, customization of built-in classes through inheritance, actors that can perform scripted actions, events that can be scheduled, and rules that monitor the game world and triggers when a particular condition arises.

Primary platforms are Windows, MacOSX and Linux. Interpreters are either commandline or GUI (e.g. WinArun) or slot-ins in Gargoyle or **Thunderword**.

Professional Adventure Writer (PAW)\Adventure Creation Environment (ACE)\The Quill -

<http://www.worldofspectrum.org/infoseekid.cgi?id=0006825>

http://www.ifwiki.org/index.php/The_Quill

http://www.ifwiki.org/index.php/Adventure_Creation_Environment

PAW was first released in 1986, by Gillsoft International (Tim Gilberts, Graeme Yeandle, Phil Wade) for the ZX Spectrum, an 8-bit personal home computer released in the United Kingdom in 1982 by Sinclair Research. ACE is basically a port of PAW for PC created by Andrew Clark and combining some element of a lesser known Spectrum IF authoring tool, The Quill (also by Graeme Yeandle and published by Gilsoft International Ltd, in 1983). ACE was still being used during the 2000s, but the homepage is dead now.

AdvSys

Adventure game maker released in 1987, by David Betz

Full magazine article by Betz, announcing and explaining the program:

http://mirrors.ibiblio.org/interactive-fiction/articles/byte87_betz.html

StorySpace by Eastgate (see above)

Initially released in 1987

TADS

Released 1987 (see above).

ADL – Adventure Definition Language

Used to imitate Infocom games, released 1987.

<https://sourceforge.net/projects/adl/>

<http://adl.sourceforge.net/>

“ADL (which stands for "Adventure Definition Language") is a programming language and run-time environment designed for the convenient implementation of Adventure-like games. This document describes ADL and is intended for the use of a programmer who wishes to create such a game.

The authors would like to acknowledge the tremendous influence of the earlier language DDL from which ADL was derived. DDL was created in 1981 by Bruce Adler, Chris Kostanick, Michael Stein, Michael Urban, and Warren Usui, then members of the UCLA Computer Club. For information on DDL, please consult the document "A Brief Description of UCLA Dungeon Definition Language (DDL)" written by the creators of DDL."

Hugo

By Kent Tessman, launched at some point in the late 80s (see above).

AGT – Adventure Game Toolkit

By David Malmberg, expanding upon the code of Welch’s GAGS, released in 1988.

“The first popular construction kit capable of fooling a player even momentarily into believing she was playing an Infocom game would rather be an American system called the Adventure Game Toolkit, or AGT, the first system of its kind to be widely used in the United States since Eamon.”

<https://www.filfre.net/2016/08/agt/>

“The core of Malmberg’s enhancements is a system of something he called “meta-commands,” which allow the author to make things happen that aren’t hard-coded into the system’s preconceptions. An AGT game which uses meta-commands has a new “command file” and a “message file” to go with the standard GAGS database definitions. The command file consists of a long string of entries to be checked against the player’s typed command. When matches are found, customized things of the author’s choosing can happen, possibly outputting custom text from the message file.”

Example game: A Dudley Dillema

<https://www.filfre.net/2018/01/a-conversation-with-judith-pintar/>

Conversations with Judith Pintar, creator of the two best known AST games: Cosmoserve (1991) and Shades of Gray (1992)

Inform 1-6

IF tool, first version created in 1993 (See above)

Visual Novel

AVG32\RealLive

Earliest popular Japanese visual novel maker. Now **RLDev** (see below).

KiriKiri (see below)

NScripter (see below)

Storybook Weaver

<https://classicreload.com/dosx-storybook-weaver.html>

1994 educational storybook-creation game. (Porpentine aims to create a future work on it)

Real-Time Animation

Director (Macromedia/Adobe, 1987)

https://en.wikipedia.org/wiki/Adobe_Director

<https://www.kibin.com/essay-examples/an-overview-of-macromedia-director-an-authoring-software-ILVMpD6p>

DreamWeaver (Macromedia\Adobe IDE, 1997) -

https://en.wikipedia.org/wiki/Adobe_Dreamweaver

Hypercard (Apple, 1987)

<https://en.wikipedia.org/wiki/HyperCard>

<https://www.amazon.com/HyperCard-Authoring-Tool-Instruction-Guide/dp/0892623624>

Hypercard 3.0 – 1996, integration with Quicktime - <http://folkstream.com/muse/teachhc/hc3.html>

Shockwave (Macromedia\Adobe, 1995) -

https://en.wikipedia.org/wiki/Adobe_Shockwave

VideoWorks (by Macromind, developed for Mac, 1985)

The base-software for both Director and Shockwave.

SmartSketch (FutureWave Software, early 1990s)

The company's first product was SmartSketch, a drawing program for the PenPoint OS and EO tablet computer. When pen computing did not take off, SmartSketch was ported to the Microsoft Windows and Macintosh platforms. This basic animation tool switched hands to Macromedia, then Adobe, and formed the basis for what is now Adobe Animate.

Future Splash animator (1995)\Macromedia Flash (1996)

Future Splash animator was launched by Futurewave software, 1995, after modifying SmartSketch around frame-by-frame animation. When the company was bought by Macromedia in 1996, it was renamed Macromedia Flash (which since became Adobe Flash when Macromedia, in turn, was bought).

Game engines

The Arcade Machine

https://en.wikipedia.org/wiki/The_Arcade_Machine

First open game-creation tool ever?

The Arcade Machine is a 1982 [game creation system](#) video game by [Brøderbund Software](#). It was released on [Apple II](#) and [Atari 8-bit family](#). The software was created by [Chris Jochumson](#) and [Doug Carlston](#).^[1]

DIV Games Studio

DIV Games Studio (es), software for a game development programming language developed by Hammer Technologies. Published 1998 according to Spanish wiki, 1996 according to div.arena.uk .

<http://div-arena.co.uk/>

<https://github.com/DIVGAMES/DIV-Games-Studio>

Fenix-project is an attempt to revive DIV by using its language for a modern game engine.

https://en.wikipedia.org/wiki/Fenix_Project

Same goal has apparently been achieved by a github page - <https://github.com/DIVGAMES/DIV-Games-Studio>

3 different historical tools titled game-maker (not to be confused with GameMaker Studio, originally titled Amino and launched on 1999):

Gamemaker

<https://en.wikipedia.org/wiki/GameMaker>

GameMaker is an all-in one game creation system for Mac OS 7.5 and up (including Mac OS X), written by Al Staffieri Jr. and first released in **1995**. As of August 2011, the software is still under active production; the most recent release is version 3.9.95.^[1]

Game-Maker suite

<https://en.wikipedia.org/wiki/Game-Maker>

Game-Maker (aka **RSD Game-Maker**) is an MS-DOS-based suite of game design tools, accompanied by demonstration games, produced between **1991** and 1995 by the Amherst, New Hampshire based **Recreational Software Designs** and sold through direct mail in the US by **KD Software**.

Garry Kitchen's GameMaker

https://en.wikipedia.org/wiki/Garry_Kitchen%27s_GameMaker

Garry Kitchen's GameMaker is an IDE for the Commodore 64, Apple II, and IBM PCs, created by Garry Kitchen and released by Activision in **1985**. The software is notable as one of the earliest all-in-one game design products aimed at the general consumer, preceded by Broderbund's The Arcade Machine in 1982.

Click & Play and The Games Factory (Europress, now know as Clickteam)

Wikipedia

<https://en.wikipedia.org/wiki/Clickteam>

“Clickteam's debut software was *Klik & Play*, released in **1994** as commercial, proprietary software;^[3] this marked the team's first successful software release. A version for educational use, dubbed *Klik & Play For Schools*, was also released as freeware, to be used exclusively for school activities.^[4] *Klik & Play For Schools* was available for download in Clickteam's website during the course of 2006, now being available for the public in general. Subsequent releases included, released in 1996, Clickteam's second product, *Click and Create* later renamed *Multimedia Fusion Express* which included more advanced features which the original *Klik & Play* lacked, such as scrolling, and a timeline editor, 3D game-making tool *Jamagic*; *The Games Factory*; *The Games Factory 2*; and *Multimedia Fusion*.

Clickteam's most recent application is *Clickteam Fusion 2.5 (CF 2.5)*. This title is the successor to *Multimedia Fusion 2*, the company's most well-received software application to date.

In September 2016 Clickteam partnered with the [Humble Bundle](#) and offered a *Fusion 2.5* centered bundle. Around ten games and Fusion 2.5 with various export modules were offered in the "*Clickteam Fusion 2.5 Bundle*". Notably, for several games the [source code](#) was included.^{[5][6]}

https://clickwiki.net/wiki/The_Games_Factory

"The Games Factory, or shortened to TGF is the successor product to Kilk & Play developed by Europress (now known as Clickteam). It was a sister product to Click & Create at release, which offered additional features and had a more relaxed runtime agreement. The product's distribution varied by region. For instance, in the United Kingdom, it was published by Empire Interactive under the publishing label Xplosiv (now defunct)

The software was released in 1996 and is available in 2 editions: Home and Pro. It also provided an option to install the 16-bit version (for Windows 3.1 users) or the 32-bit version (for Windows 95 users). Creations saved by the product used the GAM file extension as well as being able to create stand alone executables with an optional installer. An unregistered "trial" version was also available.

This is the low-cost version of the product released in 1996 which allowed the user to make games without needing to learn code. The distribution agreement is that games created by the software will display a compulsory splash screen advertising the product. Additionally, the software states the software should be distributed at no cost as freeware and should contact Europress if they were charged for the stand alone program.

The Pro edition removes the splash screen at the end of stand alone games, permits the user to sell their creations, and has a Time Line editor. This was available to obtain via Clickteam, but with the release of Multimedia Fusion 2, this is no longer possible. Users wanting to upgrade are advised to update to a newer version of the product. TGF Pro is the same as Multimedia Fusion Express, previously Click & Create."

https://en.wikipedia.org/wiki/Clickteam#Video_game_development_software

Video

Aspen Movie Map

https://en.wikipedia.org/wiki/Aspen_Movie_Map

"The Aspen Movie Map was a revolutionary hypermedia system developed at MIT by a team working with Andrew Lippman in 1978 with funding from ARPA. The Aspen Movie Map enabled the user to take a virtual tour through the city of Aspen, Colorado (that is, a form of surrogate travel). It is an early example of a hypermedia system."

AR\VR\MR

Placeholder

Laurel, Brenda, Rachel Strickland, and Rob Tow. "Placeholder: Landscape and narrative in virtual environments." ACM SIGGRAPH Computer Graphics 28.2 (1994): 118-126.

Prototype VR project and development work environment by Brenda Laurel and her team (Interval research Corp. Circa 1994).

Quote:

“About Placeholder

[...]Placeholder is the name of a research project which explored a new paradigm for narrative action in virtual environments. The geography of took inspiration from three actual locations in the vicinity of Banff National Park in Alberta, Canada - the Middle Spring (a sulfur hot spring in a natural cave), a waterfall in Johnston Canyon, and a formation of hoodoos overlooking the Bow River. Three-dimensional videographic scene elements, spatialized sounds and words, and simple character animation were employed to construct a composite landscape that could be visited concurrently by two physically remote participants using head-mounted displays. People were able to walk about, speak, and use both hands to touch and move virtual objects.

People's relationships with places and the creatures who inhabit them have formed the basis of many traditions and spiritual practices, as well as ancient stories and myths. The graphic elements in Placeholder were adapted from iconography that has been inscribed upon the landscape since Paleolithic times. Narrative motifs that revealed the archetypal characters of landscape features and animals were selected from aboriginal tales. Four animated spirit critters - Spider, Snake, Fish, and Crow - inhabited this virtual world. A person visiting the world could assume the character of one of the spirit animals and thereby experience aspects of its unique visual perception, its way of moving about, and its voice. Thus the critters functioned as "smart costumes" that changed more than the appearance of the person within Placeholder.

People sometimes leave marks in natural places - pictograms, petroglyphs, graffiti, or trail signs for example. In Placeholder, people were able to leave Voicemarks - bits of spoken narrative - that could be listened to and rearranged by anyone who passed through. The virtual landscape accumulated definition through messages and storylines that participants left along the way. We hope that the ideas we explored in Placeholder will foster the emergence of new forms of narrative play.”

Narrative-generation\mixed initiative

Grimes Fairy Tales (1960s story generator)

By Joseph E. Grimes

Re-discovered by James Ryan, in his paper for ICIDS 2017.

Abstract: "We provide the first extensive account of an unknown story generator that was developed by linguist Joseph E. Grimes in the early 1960s. A pioneering system, it was the first to take a grammar-based approach and the first to operationalize Propp's famous model. This is the opening paper in a series that will aim to reformulate the prevailing history of story generation in light of new findings we have made pertaining to several forgotten early projects. Our study here has been made possible by personal communication with the system's creator, Grimes, and excavation of three obscure contemporaneous sources. While the accepted knowledge in our field is that the earliest story generator was Sheldon Klein's automatic novel writer, first reported in 1971, we show that Grimes's system and two others preceded it. In doing this, we reveal a new earliest known system."

Eliza (Joseph Wizenbaum, 1966)

<https://en.wikipedia.org/wiki/ELIZA>

<https://www.chatbots.org/chatbot/eliza/>

Tool presented by James Ryan

<http://www.lhn.uni-hamburg.de/article/story-generator-algorithms>

Oz-Project (IMPROV and other tools) (1989-1997)

A project by Carnegie Mellon University, which officially ended December 2002 (de-facto, publications ceased on 1997, with the exception of Mateas 2002 Phd project that the OZ page lists but seems to have been written in its post-mortem limbo years). Looking into all realms of interactive drama, particularly AI generation of narrative and characters (but also paying attention to other subfields, such as VR). Members include Brenda Laurel, Michael Mateas and Joseph Bates. Many programs and prototypes were developed, for example IMPROV.

See overview articles:

Mateas, Michael. "An Oz-centric review of interactive drama and believable agents." Artificial intelligence today. Springer, Berlin, Heidelberg, 1999. 297-328.

Bates, Joseph. The nature of characters in interactive worlds and the Oz project. Pittsburgh, PA: School of Computer Science, Carnegie Mellon University, 1992.

Minstrel

By Scott R. Turner

Turner's 1993 Phd dissertation involved development a heuristic-based story-generation system

Abstract: "Telling a story is a difficult task that requires a variety of knowledge and cognitive processes: knowledge about themes, writing techniques, the story world, and presentation; processes such as planning, problem-solving, recall and creativity. This dissertation presents a model of the storytelling process which incorporates theories of creativity, memory and author-level planning. This model has been implemented in a computer program called MINSTREL which tells short, theme-based stories about King Arthur and his Knights of the Round Table.

MINSTREL's creativity process is based upon creativity heuristics called Transform-Recall-Adapt Methods (TRAMs). Each TRAM integrates a simple problem transformation which searches the problem-space for new knowledge to apply to a problem with a corresponding adaptation which can adapt any discovered knowledge to the original problem. By using TRAMs to augment the problem-solving process, MINSTREL is able to invent useful new problem solutions. By incorporating creativity into the recall process, MINSTREL makes creativity available to any cognitive process, and permits the use of multiple TRAMs to make creative "leaps".

MINSTREL's storytelling process is based upon a model of author-level problem-solving. In addition to a process model of author-level problem-solving, MINSTREL implements four important classes of author-level goals and plans: (1) Thematic, (2) Dramatic, (3) Consistency, and (4) Presentation. MINSTREL uses these goals and plans to tell a number of short stories in the King Arthur domain.

MINSTREL is a computational model of the cognitive processes of storytelling and creativity. MINSTREL (1) describes a process model of storytelling, (2) identifies important storytelling goals and plans, (3) identifies fundamental storytelling processes, (4) describes a process model of creativity, (5) explains how a problem-solver can find and adapt old knowledge to create new solutions, (6) identifies useful creativity heuristics, (7) explains creative "leaps", (8) explains the relation of creativity to problem-solving, (9) describes the relationship between memory and creativity, and (10) integrates creativity into a larger cognitive model."

In Arinbjarnar & co: "Turner's Minstrel [67] uses case-based reasoning to generate stories about knights and ladies in the days of King Arthur. The cases are existing stories and these are matched to desired stories – replacing variables where necessary – and recombined to create new stories. The system utilises its awareness of what is consistent within a world to ensure that the generated stories have this feature, and tries to present a twist at the end of each story. Both the characters and the story have goals, which are entered by the user before story generation begins."

Turner, Scott R. "Minstrel: a computer model of creativity and storytelling." (1993).

Turner, Scott R. *The creative process: A computer model of storytelling and creativity*. Psychology Press, 2014.

TALE-SPIN

Famous academically developed story generation system by James Meehan, 1977. Referenced by Murray in HoH.

Simulates character behavior through three main active components: problem solver (reacting to a goal to produce events\other goals), “assertion mechanism” (adds an event to memory, shaping the programs “world knowledge”) and a mechanism that produces the consequences of an event.

Meehan, James R. "TALE-SPIN, An Interactive Program that Writes Stories." Ijcai. Vol. 77. 1977.

UNIVERSE

By Michael Lebowitz, 1987.

In Arinbjarnar & co: “Planning was used to create infinite soap opera style stories in Lebowitz’s UNIVERSE [33]. In this it was necessary for the author to provide goals to the story-telling system. UNIVERSE used these goals and existing plot fragments to create a summary of a soap opera plot. System-created stereotypical characters are dynamically assigned roles in these fragments, with new characters being added if no existing character is able to take on a particular role. Character relationships are central to the interwoven storyline. The system is reliant on the reader assuming characters’ motivations. Michael Lebowitz, ‘Planning stories’, in Ninth Annual Conference of the Cognitive Science Society, Seattle WA, (1987).

C.IX- IDN middleware: interpereters\translators\General APIs

Definition: These are not authoring tools, but rather software meant to allow for usability, importability and exportability of various IDN formats. Such software is crucial, according to Koenitz (2017), in order facilitate the implementation of common formats for IDN design, and in order to advance the field towards a future where multiple IDN tools can be implemented in tandem in the design process (much like, for example, Adobe Creation Suite – the crucial importance of whose cross-platform function is discussed in Manovich 2009)

ASML

http://advancedstories.net/?page_id=261

“This is an ongoing effort to document the ASML format for describing interactive narratives. So far ASML is explained here by giving examples. We will further expand this documentation.”

The XML-based markup language developed by Hartmut Koenitz for his tool ASAPS is also meant to serve as infrastructure for a potential general-IDN-authroing-API, in the spirit of OPARIS (Koenitz 2014 66-67).

Gargoyle

<http://ifarchive.smallwhitehouse.org/indexes/if-archiveXinterpreters-multiXgargoyle.html>

The most important figure by far in contributing to all-platform IF interpreters is Andrew Plotkin, who developed Z-Machine into the still most often used/referenced Gargoyle.

He recently launched a new-school all-purpose interpreter and platform, Glk!

Video: https://www.youtube.com/watch?v=FhVob_sRqQk

OPARIS

In limbo?

Szilas, Nicolas, et al. "Specification of an open architecture for interactive storytelling." International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2011.

Abstract: "This article introduces OPARIS, an OPEN ARchitecture for Interactive Storytelling, which aims at facilitating and fostering the integration of various and heterogeneous Interactive Storytelling components. It is based on a modular decomposition of functionalities and a specification of the various messages that different modules exchange with each other. "

<http://www.riders-project.net/research/systems-tools/Page-2.html>

An early version? The link provided in the RIDERS page is broken. "Oparis - ActAffact theatre - A theatre, in the terminology of the OPARIS API, based on the display component of ActAffAct. - Stefan Rank (Austria)"

Scaleform Gfx

Middleware mostly connecting flash content to game engines. In Limbo as of July 2017. See above.

Scotkitt

Text Fiction

<http://www.onyxbits.de/textfiction>

“Text Fiction is an Interactive Fiction interpreter for Android. Think of Interactive Fictions as stories in which you actively control the actions of the protagonist and as a result influence how the story line unravels.

Text adventures provide a great source of entertainment on long road trips as they require no internet connection and only little computing power, allowing your battery to last longer.”

Twisty

<https://bitbucket.org/sussman/twisty>

Twisty, a text-adventure interpreter for Android.

=====

Twisty is a game interpreter for the Android operating system. It allows you to play both classic and modern "text adventures" on your mobile device.

You can find numerous games to download at <http://ifarchive.org>. We also recommend visiting <http://www.ifwiki.org> for general information on Interactive Fiction.

Twisty is theoretically capable of identifying and playing both types of games.

Z-Machine + Glulx Machine

Powerful interpreter for historical IF.

The z-machine is a virtual machine designed in 1979 by Infocom for playing text adventures, and it has been re-implemented on nearly every computer and PDA since then. This application allows Android users to play Infocom classics just as 'Zork', as well hundreds of newer text adventures written in the last ten years or so.

The glulx-machine is an modernized version of the z-machine capable of abstracted I/O, 32-bit operations, and other nifty things possible without ancient memory constraints. Most modern text adventures written in Inform (www.inform7.com) create games of this type.

History of writing aids- quoteing James Ryan’s emails:

“many tools that were meant to aid creative writers, especially script writers (1980s-1990s); quoting here from a description I found somewhere

The Collaborator is an interactive software program designed for the creation and analysis of stories for television and feature films. It conducts an ongoing conversation with you, leading through 70 key dynamically programmed questions fleshing out Aristotle's six elements of drama. You can leave the Questions section any time and enter aCharacter section where a template is displayed for the different characters and you can add descriptions, dialog samples, etc.

Houdini allows you to dump in your characters, locations, and events. You then crosslink and string together as many of these events as possible, creating conflicts, growth and resolution. Houdini helps you organize the mess into a coherent plot, sure to please your agent and your publisher.

Plots Unlimited is an interactive computer program for writers of screenplays, novels, short stories, plays and television scripts offering you thousands of plots, sub-plots and character relationships. It will deliver professionally structured stories for any genre; give you the flexibility to start stories at any plot-point, then develop them forward or backward.

C.X- Story Generation tools\Procedural AI authoring systems

Definition: Unlike the 'mixed-initiative' tools whose generated narratives are in a sense co-authored by human and computer, the following tools are basically programs that author their own narratives.. Since human-customization is a minor function for these tools at most, none of them qualify as IDN authoring tools in our scope. Basically, these are all more authoring *systems* than authoring *tools*.

However, many of these systems are of strong narrative interest, entail unique theoretical structures and narrative infrastructure, and are potentially integratable into a broader mixed-initiative authoring process. Additionally, as the promises of model-based design essentially proclaim to turn the IDN authoring into a process that involves AI processing to a far higher degree than in the past, procedural generation systems could be a precursor to such functions.

This list is highly incomplete, and contains mostly academic projects -> **basically its procedural generation tools that I came across in the ICIDS, IRIS & RIDERS catalogues, primarily. I'm sure it could be expanded – and that some tools I haven't heard of are worthy inclusion to this category of peripheral potential relevance - but this is already going beyond my scope.**

ACTAFFACT

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/ActAffAct>

“Availability

Documentation and the Java-based ActAffAct system itself are available online.

Technical Description

The project investigates to which extent equipping characters with a simulation of Ortony's (2003) derivation of control principles from the OCC appraisal theory of emotion (Ortony et al., 1998) is sufficient to achieve dramatic structures while interacting in a conflict prone environment.

[...]Strong Points

The main result of the system is the possibility of some level of generativity based solely on the conflicts between the characters in the set-up of a play, the possibilities offered by the physical environment, and the simulated emotions and skills involved in resolving them. Affective reactions can then be seen as the constituents of a dramatic structure. The system offers detailed inspection access to the mechanisms operating "under the hood", as well as some limited configurability at run-time.

Limitations

Since the system is intended neither as an authoring tool nor as a presentation system, the options to interact and alter behaviour are limited and quickly require direct modification of the programme base.

Main Publications

Rank S. (2004). *Affective Acting: An Appraisal-based Architecture for Agents as Actors*. Institut für Medizinische Kybernetik und Artificial Intelligence, Universität Wien, Diplomarbeit (M.S.Thesis).

Rank S. (2005). *Toward Reusable Roleplayers Using an Appraisal-based Architecture*. In Payr S. (ed.): *Educational Agents and (e-)Learning, Applied Artificial Intelligence 19(3-4):313-340*.

Rank S., Petta P. (2005). *Appraisal for a Character-based Story-World*. In Panayiotopoulos T. et al. (eds.), *Intelligent Virtual Agents, 5th International Working Conference, IVA 2005, Kos, Greece, September 2005, Proceedings, LNAI 3661, Springer Berlin Heidelberg, pp.495-496*.

Rank S., Petta P. (2005). *Motivating Dramatic Interactions, in Agents that Want and Like: Motivational and Emotional Roots of Cognition and Action, AISB, The Society for the Study of Artificial Intelligence and the Simulation of Behaviour, University of Sussex, Falmer, Brighton, UK, EU, pp.102-107*.

Rank S., Petta P. (2007). *From ActAffAct to BehBehBeh: Increasing Affective Detail in a Story-World*, in Cavazza M. and Donikian S.(eds.), *Virtual Storytelling: Fourth International Conference (ICVS 2007), St.Malo, France, EU, December, 2007. Proceedings, LNCS 4871, Springer Berlin Heidelberg, pp.206-209*.

Supporting Narrative Theories

ActAffAct is based mainly on Campbell1968/Vogler1996 (monomyth) plus Egri, and Forster (motivated causality as essential for plot).

Automated Story Directo

M.O., Saretto, C.J., Young, R.M.: Managing interaction between users and

agents in a multi-agent storytelling environment. In: 2nd International Joint Con-

ference on Autonomous Agents and Multiagent Systems, pp. 741–748. ACM (2003)

Defacto

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Defacto>

<http://www.cslab.ece.ntua.gr/~defacto/default.htm>

IRIS project. Also has an independent website, last updated 1997. Generates 3D characters responsive to end-user's real-time responses in a multiple choice-menu. Highly ambitious at sticking to all the rules of Aristotelean drama.

“Technical Description

Defacto is an interactive story generation system, where the user intervenes in the story by choosing between options for the story protagonist.

The story generation uses Artificial Intelligence techniques to generate characters' actions, based on a set of rules. The algorithm contains two phases:

In the first phase, **a sequence of actions is dynamically generated, with user intervention, until no dramatically interesting interaction is found**. In the second phase, the current actions' outcomes are computed to provide an unambiguous solution to the story. This resolution follows an aristotelian organization of drama.

Dramatic sequence generation

In a first step (called "generation"), a set of possible interactions between the story characters is generated, according to both their goals and norms. Characters not only perform their own goals but can also intervene, favorably or unfavorably, in other characters' goals. Social interaction also occurs, for example a character helping another character if they were helped by this character in the past.

One particular action will be generated for each character. In order to select which action each character could perform, the following selection rule is used: Choose the action that refers to as much of the story background as possible.

In a second step (called "evaluation"), interesting dramatic situations are detected, according to a series of dramatic-related rules, such as:

User-Centered Drama: Select an action that involves the protagonist for the next plot development

Interactivity bias: Favor user participation in the story

User-Centered Engagement: Favor a protagonist's goals for the current storyline goal

Unity of Plot: Accept intervention by characters affiliated with the current storyline goal

Parsimony of Plot: limit the number of actions related to a conflict between two characters (to avoid infinite sequence of reciprocal interactions between two characters)

Resolution

Following the classical aristotelian arc, the plot manager refrains from resolving any action attempt before resolution. The start of resolution corresponds to the main climax of the drama. Resolution consists in deciding which actions succeed and which actions fail, including user actions.

Result Description (end user perspective)

The prototype implements a greek tragedy, involving various characters with their goals and conflicts. The goal of the user is to worship Poseidon in Corinthos. The story happens in a 3D environment. At important moments in the narrative, the user is given options to choose from.

Strong Points

Defacto is highly generative, thus providing a potential solution to the core algorithmic issue of interactive storytelling (narrative paradox). This system truly incorporates in its mechanics both strong narrative constraints and user-centered constraints. The system has been fully implemented.

Limitations

The complexity of the algorithms makes its appropriation by other researchers and authors difficult.

Main Publications

Sgouros, N. M.(1999). Dynamic Generation, Management and Resolution of Interactive Plots, Artificial Intelligence, 107,1, 29-62.

Supporting Narrative Theories

Defacto is explicitly based on the theory of Aristotle.

Defacto implements norms, which corresponds to the ethical dimension of narrative.

It is also partially based on the idea of increasing the suspense (in the Resolution phase).

Type of interaction

The story is represented in a 3D environment, while user interaction occurs via multiple choice menus.”

DINAH - DYNAMIC, INTERACTIVE, NARRATIVE AUTHORIZING HEURISTIC

Ventura, David, and David Brogan. "Digital Storytelling with DINAH: dynamic, interactive, narrative authoring heuristic." *Entertainment Computing*. Springer US, 2003. 91-99.

https://link.springer.com/content/pdf/10.1007/978-0-387-35660-0_11.pdf

"DINAH builds entire narratives from a database of indexed story segments. The narrative DINAH builds dynamically adjusts to a user's interaction while run-time algorithms ensure that the essential ingredients of a compelling narrative are preserved. We use DINAH to further explore the potential and utility of interactive, computer-generated narrative, both as a learning tool and an entertainment technology."

<https://www.youtube.com/watch?v=n4MxWKE6Bsg>

Fabulist\OpenStories

<http://www.riders-project.net/research/systems-tools/Page-2.html>

Two somehow connected systems by Mark Riedl.

<http://www.lhn.uni-hamburg.de/article/story-generator-algorithms>

"ABULIST (Riedl & Young 2010) was an architecture for automated story generation and presentation. The Fabulist architecture split the narrative generation process into three tiers: fabula generation, discourse generation, and media representation. The fabula generation process used a planning approach to narrative generation. AI planners are applications that, given a description of an initial state of the world and a specific goal, identify the optimal sequence of actions to reach the goal. They rely on detailed descriptions of the preconditions and postconditions of all the possible actions. The planning approach to narrative generation is based on the assumption that a sequence of actions leading from an initial state to a goal is a good approximation of a story. In the case of FABULIST, inputs provided included a domain model describing the initial state of the story world, possible operations that can be enacted by characters and an outcome."

PSST

Unity plugin for story generation based on some basic specified parameters chosen as words from a graphical option interface.

<https://ocarson.itch.io/psst>

PSST! is a tool to make short procedural stories using word lists, sentence structures, and story frameworks. It's structured in such a way that it can be integrated in to unity projects quite seamlessly (when the source gets released).

Click on words to make a sentence. the bottom left of each word designates a type, character 1-3, object 1-3 or location 1-3, the story generator uses this information.

You can also "pin" words that you don't want to change. Some words default to pinned.

The story generator will make a story using sentences structures you add.

This is a WIP and was developed for #procjam2017.”

Thespian

Si, Mei, Stacy C. Marsella, and David V. Pynadath. "Directorial control in a decision-theoretic framework for interactive narrative." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2009.

Abstarct: “Computer aided interactive narrative has received increasing attention in recent years. Automated directorial control that manages the development of the story in the face of user interaction is an important aspect of interactive narrative design. Most existing approaches lack an explicit model of the user. This limits the approaches’ ability of predicting the user’s experience, and hence undermines the effectiveness of the approaches. **Thespian is a multi-agent framework for authoring and simulating interactive narratives with explicit models of the user. This work extends Thespian with the ability to provide proactive directorial control using the user model. In this paper, we present the algorithms in detail, followed by examples.**”

<http://redcap.interactive-storytelling.de/authoring-tools/thespian/>

“Thespian is multi-agent framework for authoring and simulating interactive narrative.

Egri Lajos has strongly argued for the importance of characters in traditional narratives. His view of narrative — of rich, well motivated, autonomous characters as a creative spark to the author, and is nevertheless constrained by the author’s goals for the plot — serves as inspiration to the approach taken in Thespian. Specifically, a two-layer system is used for simulating interactive narrative.

At the base is a multi-agent system comprised of goal-oriented autonomous agents that realize the characters of the story. A key aspect of this layer is the richness of the agent design that provides motivations, emotions, theory of mind and social norms. The agents in this layer autonomously interact with each other and the character controlled by the user, thereby generating the story.

Above this layer is a director agent that proactively redirects the characters when it foresees future behavior of the agents will endanger the author's plot design, which can be seen as group goals for the multi-agent system. A key aspect of this layer is that the director agent has access to models of the agents and user. It uses these models to assess whether plot goals are achieved as well as redirect the characters.

In addition to the two-layer simulation system for interactive narrative, Thespian also contains off-line authoring processes to facilitate the author in the design of characters."

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Thespian>

IRIS project for easier modeling of Façade-esque characters based on parametres and actions defined by the author. Not an independent too, but interesting.

"Availability

Not available now. Check the pages of Mei Si and Stacy Marsela.

Technical Description

Thespian is a character-based approach to Interactive Drama. The choice of the actions in the narrative is based on character's internal state. Character modelling is based on PsychSims developed previously by Stacy Marsella and David Pynadath. Characters have goals, beliefs, and available actions to perform in order to reach their goal. To choose an action, a lookahead mechanism enables to assess the achievement of goals after several actions and other characters' possible reactions. The belief model not only contains beliefs of the storyworld's state but also beliefs about other characters' beliefs, in a recursive manner.

Such a character-based approach is complex and finding the right parameters to produce an interesting story is a tedious task. Therefore, a major feature of Thespian is a fitting algorithm, that allows to automatically calculate the character's parameters according to some desired path, that is story examples that are given by an author.

Result Description (end user perspective)

In the specific interactive drama called "TactLang", to teach soldiers language and culture awareness, Thespian is integrated within a 3D environment. User moves within this environment, and play the role of a character, in a subjective view. To interact with characters, the user speaks in natural language, which is automatically translated into dialog acts by the system.

Authoring Description

Authoring consists in choosing the goals of the characters, as well as actions that can be achieved towards the goals.

Several weighting parameters intervene to obtain suitable agent's behaviours and personality. To tune these parameters, authors can benefit from a fitting algorithm, as mentioned above. This process simplifies authoring because the authors enter possible story paths rather than abstract parameters for agents. After entering one or more possible story paths, the system calculates the parameters and the author can experiment with the system and possibly add new story paths if necessary.

Another automatic mechanics for authoring is the simulation of potential users. After fitting the parameters, the system generates new stories by simulating user actions. The generated stories can then be shown to the author, who gives feedback that feeds the fitting algorithm (cyclic design).

Strong Points

An advanced character model and the authoring process.

Limitations

As any character-centered approach, it is unsure how global narrative qualities can be achieved by solely tuning agents' parameters.

Main Publications

Mei Si, Stacy Marsella, and David V. Pynadath (2007). Proactive Authoring for Interactive Drama: An Author's Assistant, in 7th International Conference on Intelligent Virtual Agents, (Paris, France).

Mei Si, Stacy C. Marsella, and David V. Pynadath (2005). Thespian: Using Multi-Agent Fitting to Craft Interactive Drama, in Proceedings of the International Conference on Autonomous Agents and Multiagent Systems, (Utrecht, Netherlands), pp. 21-28.

David V. Pynadath and Stacy C. Marsella (2005). PsychSim: Modeling Theory of Mind with Decision-Theoretic Agents, in Proceedings of the International Joint Conference on Artificial Intelligence, pp. 1181-1186.

Type of interaction

3D interaction + speech recognition.”

OPIATE

Fairclough, C.: Story games and the OPIATE system. Ph.D. thesis, University of

Dublin - Trinity College (2004)

Arinbjarnar (2009): “The open ended Proppian interactive adaptive tale engine (OPIATE) [24] system creates stories based on Propp’s [52] general structures for fairy tales, see figure 11. Characters other than the user have flexible roles in the story. In each state the system chooses appropriate Proppian functions using case-based planning. The story director guides the actors by giving them goals relevant to the selected

function[23, 22]. The user’s actions are integrated into this wherever possible.”

The Virtual Storyteller

<http://redcap.interactive-storytelling.de/authoring-tools/virtualstoryteller/>

<http://wwwhome.cs.utwente.nl/~theune/VIS/>

<https://vimeo.com/11836534>

Tons of academic writing on this one. Jeroen Linssen’s phd, and Thomas de Groot, among others. University of Twente.

“Once upon a time there was a student...This is how the story of the Virtual Storyteller begins. It all started with a student who wanted to create a system that could not just tell existing stories, but actually produce new stories all by itself. Increasingly advanced versions of the Virtual Storyteller have been developed over the years, with contributions from several HMI staff and students. The result is a sophisticated multi-agent story generation system in which intelligent agents carry out goal-oriented behaviour, thus creating the content for a story that is then narrated in natural language (or comics as an alternative presentation medium). There is also an interactive version of the system, in which the user(s) can control one or more characters through a graphical interface. Current work

We are currently investigating how to use our storytelling technology in a serious game aimed at social interaction training for police officers, in the context of the COMMIT project Interaction for Universal Access.

About these web pages

On these pages you can find all scientific publications on the Virtual Storyteller, all technical reports and student papers, and all PhD and MSc theses. These include the PhD thesis by Ivo Swartjes (2010) offering an in-depth description of the system (non-interactive version), as well as insightful discussions of emergent narrative, improvisational theatre and other approaches that have inspired the work on the Virtual Storyteller. For a brief overview of the Virtual Storyteller system, have a look at its showcase on

the HMI website. More information on authoring for the Virtual Storyteller can be found at the authoring blog, created for the authoring workshop at the ICIDS 2009.”

IRIS project

http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Virtual_Storyteller

“The Virtual Storyteller builds on the emergent narrative approach as used in Fearnot. Stories are not prespecified, but emerge as a consequence of the interaction of autonomous virtual agents playing the roles of story characters in a storyworld simulation. Novel is that these agents are not only self-interested, goal-directed characters, but also drama-directed, collaborative actors. This means a distributed drama management approach is being adopted. As characters, the agents adopt character goals and create plans in order to attain these goals. As actors, the agents select external events and retrospectively fill in details of the initial state of the simulation, in order to justify the adoption of new goals and facilitate the creation of goal plans (Swartjes, Kruizinga & Theune 2008).

Main Publications

Swartjes, I., & Theune, M. (2009). Iterative Authoring Using Story Generation Feedback: Debugging or Co-creation? In I. A. Iurgel, N. Zagalo, & P. Petta (Eds.), *Interactive Storytelling* (Vol. 5915, pp. 62–73). Berlin / Heidelberg: Springer.

Swartjes, I., Kruizinga, E., & Theune, M. (2008). Let's Pretend I Had a Sword: Late Commitment in Emergent Narrative. In U. Spierling & N. Szilas (Eds.), *Interactive Storytelling* (Vol. 5334, pp. 264–267). Berlin / Heidelberg: Springer.

Swartjes, I., & Theune, M. (2008). The Virtual Storyteller: Story Generation by Simulation. In A. Nijholt, M. Pantic, M. Poel, & H. Hondorp (Eds.), *BNAIC 2008, Proceedings 20th Belgian-Netherlands Conference on Artificial Intelligence* (pp. 257–264). Enschede: University of Twente.

Swartjes, I., & Vromen, J. (2007). Emergent Story Generation: Lessons from Improvisational Theater. In *Intelligent Narrative Technologies: Papers from the AAAI Fall Symposium* (pp. 147–150). Menlo Park: AAAI Press.

Swartjes, I., & Theune, M. (2006). A Fabula Model for Emergent Narrative. In S. Göbel, R. Malkewitz, & I. Iurgel (Eds.), *Technologies for Interactive Digital Storytelling and Entertainment* (Vol. 4326, pp. 49–60). Heidelberg: Springer.”

ISRST-IS

http://tecfalabs.unige.ch/mediawiki-narrative/index.php/ISRST_IS

Dead link to one prototype story, "When Your Heart Takes Over", a full-length implementation of an ISRST-based interactive story that is playable on a Java enabled Web browser.

Technical Description

“ISRST is an interactive storytelling ontology model based on Rhetorical Structure Theory. It is an evolution of the SRST model, aimed at improving authoring flexibility. In addition, an approach to user interaction/user modelling in interactive digital storytelling based on the notion of interest is introduced. Here, from the current interest in the story expressed by the user, the measures of global background interest and particular interests in individual story characters ("Agent Interest Evaluation") are derived. Background interest influences story presentation in terms of whether preference is given to advancing the story or presenting further (causal or background) detail; inferred degree of empathy with characters provides a basis for choice of story evolution towards an ending agreeing with this user preference.”

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/ISRST>

SRST model: “SRST (Interactive Storytelling Model using RST, a recent evolution of SRST) proposes an interactive computational model wherein reasoning over an instantiated conceptual framework is informed by interactive input, which is not directly mapped to model constituents, but rather mapped to dynamically changing global and local (i.e., agent-specific) criteria for the selection of the next presentation unit of the story (and thus also its evolution). ISRST promotes a strict separation of concerns, keeping the visual presentation aspects distinct from event sequencing determined by story reasoning carried out over an ontological structure. The design of this ontological structure draws heavily upon RST (Rhetorical Structure Theory) but deviates based on experiences gathered with SRST to (better) accommodate desiderata of interactive storytelling.”

Main Publications

Nakasone, A. & Ishizuka. M. (2006). SRST: A Storytelling Model using Rhetorical Relations. Third International Conference on Technologies for Interactive Digital Storytelling and Entertainment, TIDSE 2006, Springer LNCS 4326, Darmstadt, Germany, pp. 127-138.

Nakasone, A. & Ishizuka. M. (2007). ISRST: An Interest based Storytelling Model using Rhetorical Relations. Proc. Edutainment 2007, Springer LNCS 4469, Hong Kong, China, pp. 324-335.

Nakasone, A., Prendinger H. & Ishizuka. M. ISRST: Generating interesting multimedia stories on the Web, Applied Artificial Intelligence (forthcoming).

MASK

Based on much prior work on procedural AI character generation by R.M Young

Bahamón, Julio César, and R. Michael Young. "A Formative Study Evaluating the Perception of Personality Traits for Planning-Based Narrative Generation." International Conference on Interactive Digital Storytelling. Springer, Cham, 2016.

Abstract: “The presence of interesting and compelling characters is an essential component of effective narrative. Well-developed characters have features that enable them to significantly enhance the believability and quality of a story. We present an experiment designed to gauge an audience’s perception of specific aspects of character personality traits expressed through the characters’ choices for action. The experiment served as a formative evaluation for work on the development of the **Mask system for the automatic generation of narratives that express character traits through choice. Results from our study evaluate the hypothesis that the relationship between choices and the actions they lead to can be used in narrative to produce the perception of specific personality traits in an audience.**”

Mimesis

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Mimesis>

Iris project, By the Liquid Narrative Group – University of Utah (created Bowman, Zocalo, and a bunch of other procedural generation systems). Involved Mark Riedl (who also created further systems like the automated story director - <https://www.youtube.com/watch?v=1tJzeFMBLLA>) and R.M Young.

<https://liquidnarrative.csc.ncsu.edu/>

“Technical Description

Mimesis makes use of **planning algorithms to calculate actions and events in a story**. A planner identifies an initial plan starting from a set of initial conditions and reaching a final situation after a number of steps defined by the author (i.e. the protagonist reaches a certain goal, while another character is in a certain state).

If the user's intervention threatens the precalculated plan, the system performs one of the two alternative strategies:

Accommodation: the planner recalculates another plan that integrates the user's action.

Intervention: the planner changes the user's action by making it fail. For example, a coin machine will not work (so that the coin is not lost) or a shooting fails (so that the targeted character remains alive).

Mimesis is integrated within a Real-Time 3D environment, via the Unreal Tournament game engine.”

Publications

- Bae, B.-C. & Young, R. M. (2008). A Use of Flashback and Foreshadowing for Surprise Arousal in Narrative Using a Plan-Based Approach.]. In Spierling & Szilas (Eds.) Proc. Interactive Storytelling - ICIDS 2008 (pp 156-167). Springer Verlag.

- Cheong, Y-G. & Young, R. M. (2008). Narrative Generation for Suspense: Modeling and Evaluation. In Spierling & Szilas (Eds.) Proc. Interactive Storytelling - ICIDS 2008 (pp 144-155). Springer Verlag.
- Jhala, A. and Young, R. M. (2005). A Discourse Planning Approach for Cinematic Camera Control for Narratives in Virtual Environments, in Proceedings of the National Conference of the American Association for Artificial Intelligence.
- Riedl, M., Saretto, C.J. and Young, R. M. (2003). Managing interaction between users and agents in a multiagent storytelling environment, in the Proceedings of the Second International Conference on Autonomous Agents and Multi-Agent System

Youtube videos for the two responses:

Accommodation - https://www.youtube.com/watch?v=NjSrb_WOqSY

Intervention - <https://www.youtube.com/watch?v=CbDwsG6ZUtk>

Webpage for Riedl's more current project, Entertainment Intelligence Lab:

<http://eilab.gatech.edu/projects>

Includes a bunch of projects in similar spirit, non of which is an authoring tool.

Entertainment Intelligence lab's youtube channel:

<https://www.youtube.com/channel/UCyqeZ6DeM7zHcljDhO7BzVw>

Main current project is **The Scheherazade system**. **–Anotation program that developed until 2010, inactive and wholly different than Riedl & co.'s tool with the same name.**

Scheherazade introduced as a platform: Elson, David K., and Kathleen R. McKeown. "A platform for symbolically encoding human narratives." Proc. of the AAAI Fall Symposium on Intelligent Narrative Technologies. 2007.

Not quite a tool, but a framework for cased-based, systemic reprasantation of narrative that future tools can apply.

Riedl Medium article – “why artificial intelligence should read and write stories”:

https://www.huffingtonpost.com/mark-riedl/why-artificial-intelligen_b_8287478.html

PaSSAGE

By David Thue

<http://redcap.interactive-storytelling.de/authoring-tools/passage/>

“PaSSAGE (Player-Specific Stories via Automatically Generated Events) is an interactive storytelling system whose primary goal is to take advantage of the wealth of feedback that the audience of an

interactive story provides [1,2]. By automatically learning the preferences of its audience, PaSSAGE aims to maximize the quality of its stories on a person by person basis, providing each player with the particular sequence of events that he or she will enjoy the most.

David Thue created PaSSAGE as his M.Sc. thesis project in 2006, and it is currently the focus of his Ph.D. research. It is implemented in BioWare Corp.'s Aurora Neverwinter Toolset, the software tool used to create the successful computer role-playing game, Neverwinter Nights. Although PaSSAGE is not yet available to the public, interested writers and/or researchers are encouraged to either visit the project website (<http://www.playpassage.com>), consult our publications (links below), or contact the authors directly.

Architecture Description

The primary distinguishing features of PaSSAGE are that it learns about its players while they experience its stories, and it allows authors to use what it learns to inform a wide variety of story-related decisions, through a paradigm called "Delayed Authoring" [3]. By allowing Delayed Authoring, PaSSAGE aims to grant its authors the ability to delay their decisions concerning story content for as long as possible, and particularly past the time at which a given player's story begins. By waiting to decide about story content until right before the content is needed, authors gain the benefit of having the extra, player-specific information that PaSSAGE has learned during the story so far. In this sense, PaSSAGE is designed to act as a decision-making proxy for its authors; they describe how a decision should be made for different types of players, and then PaSSAGE carries out their decision once a player's type has been learned. For example, concerning a particular event in the story, PaSSAGE allows its authors to delay the following types of decisions:

What should happen?

How should it happen?

When should it happen?

Where should it happen?

Who should be involved?

Why should actors act as they do?

PaSSAGE includes three mechanisms for making these decisions as a proxy for its authors: Courses of Action, Triggers, and Role Passing."

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/PaSSAGE>

<http://www.riders-project.net/research/systems-tools/Page-2.html>

Interactive storytelling via player modelling - David Thue (Canada)

Thue, David, Vadim Bulitko, and Marcia Spetch. "PaSSAGE: A Demonstration of Player Modeling in Interactive Storytelling." *AIIDE 8* (2008): 227-228.

1] David Thue, Vadim Bulitko, Marcia Spetch, and Eric Wasylishen. *Interactive Storytelling: A Player Modelling Approach*. The Third Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE). pp. 43-48. Stanford, California, USA. June 6, 2007.

[2] David Thue, Vadim Bulitko, Marcia Spetch, Eric Wasylishen. *Learning Player Preferences to Inform Delayed Authoring*. Papers from the AAAI Fall Symposium on Intelligent Narrative Technologies. FS-07-05: pp. 158-161. AAAI Press. Arlington, Virginia, USA. November 9, 2007.

[3] David Thue, Vadim Bulitko, Marcia Spetch. *Making Stories Player-Specific: Delayed Authoring in Interactive Storytelling*. The First Joint International Conference on Interactive Digital Storytelling (ICIDS): pp. 230-241. Erfurt, Germany. November 26, 2008.

PERSONAGE

Mairesse, François, and Marilyn Walker. "PERSONAGE: Personality generation for dialogue." *Proceedings of the 45th Annual Meeting of the Association of Computational Linguistics*. 2007.

Abstract: "Over the last fifty years, the "Big Five" model of personality traits has become a standard in psychology, and research has systematically documented correlations between a wide range of linguistic variables and the Big Five traits. A distinct line of research has explored methods for automatically generating language that varies along personality dimensions. We present PERSONAGE (PERSONALITY GEnerator), the first highly parametrizable language generator for extraversion, an important aspect of personality. We evaluate two personality generation methods: (1) direct generation with particular parameter settings suggested by the psychology literature; and (2) overgeneration and selection using statistical models trained from judge's ratings. Results show that both methods reliably generate utterances that vary along the extraversion dimension, according to human judges."

"Plan based story generator" (Thue & co.)

Thue, David, et al. "Delayed roles with authorable continuity in plan-based interactive storytelling." *International Conference on Interactive Digital Storytelling*. Springer, Cham, 2016.

Abstract: "We present a plan-based story generator that allows authors to ensure continuity over the entities in a story without committing to which entities will fulfill the story's roles. By combining the ideas of authorable continuity and delayed role assignment in a plan-based storytelling context, our

solution obtains benefits from both and mitigates some disadvantages. We introduce two notions of soundness for solutions that combine these ideas and then prove the soundness of our approach.”

Scheherazade

Seems like this story generation is used both as a general program and as part of AI game-character’s ability to understand human narratives

Purdy, Christopher, and Mark O. Riedl. "Reading Between the Lines: Using Plot Graphs to Draw Inferences from Stories." International Conference on Interactive Digital Storytelling. Springer, Cham, 2016.

Abstract: “Intelligent agents designed to interact with humans need to be able to understand human narratives. Past attempts at creating story understanding systems are either computationally expensive or require a vast amount of hand-authored information to function. To combat these difficulties, **we propose and evaluate a new story understanding system using plot graphs, which can be learned from crowdsourced data. Our system is able to generate story inferences much quicker than the baseline alternative without significant loss of accuracy.**”

Li, Boyang, and Mark O. Riedl. "Scheherazade: Crowd-Powered Interactive Narrative Generation." AAAI. 2015.

“The SCHEHERAZADE-IF system attempts to create a novel, playable interactive fictions about simple, user-provided scenarios. For example, a human designer may request an interactive experience about a “bank robbery”. **If the system does not have a model of the domain, the system uses crowd-sourcing to rapidly acquire a number of linear narrative examples about typical ways in which the topic might occur. In other words, the system collects human experiences and learns a generalized model—a plot graph—about the topic domain.** A plot graph is a representation in story generation systems that models the author-intended logical flow of events in the virtual world as a set of precedence constraints between plot events (Weyhrauch 1997; Nelson and Mateas 2005). In our work, a plot graph is a tuple $G = \langle E, P, M \rangle$ where E is the set of plot events, P is a set of temporal ordering constraints between events, and M is a set of unordered mutual exclusion relations that indicate which events can never co-occur in the same narrative experience. Mutual exclusion relations indicate branches where alternative narratives can unfold. See Figure 3 for a plot graph model of a bank robbery. **By learning plot graphs from the collected examples, our system can generate an interactive narrative about any topic for which a crowd of people can generally agree on the main events that should occur and the sequencing of the events.**”

Li, Boyang, Stephen Lee-Urban, and Mark O. Riedl. "Toward autonomous crowd-powered creation of interactive narratives." 5th Workshop on Intelligent Narrative Technologies, Palo Alto, CA. Vol. 8. 2012.

Abstract: “[...] In this paper, we introduce **SCHEHERAZADE, an intelligent system that automatically creates an interactive narrative about any topic from crowdsourced narratives. Our system leverages the experience and creativity of humans by crowdsourcing a corpus of linear narrative examples. It then constructs an executable plot graph, which is a knowledge structure that**

defines the legal space of an interactive narrative, by learning the plot events, execution precedence, and event separations. We demonstrate the system can successfully construct an interactive narrative based on noisy human input.”

Li, B., Thakkar, M., Wang, Y., Riedl, M.O.: Data-driven storytelling agents with adjustable personal traits and sentiments. In: Proceedings of the 7th International Conference on Interactive Digital Storytelling (2014)

Li, Boyang, Stephen Lee-Urban, and Mark Riedl. "Crowdsourcing interactive fiction games." FDG. 2013.

Prototypes

Most of these are drama managers – a particularly interesting category of story-generators for general IDN purpose, as they can very conceivably integrate and play a key role in a system of author-generated content. Each drama manager prototype is therefore, in a way, a potential authoring tool in-development.

BARDS\Bovary

IRIS project. Looks into AI modeling based on formalization of psychological profiles and ‘feelings’ based on natural language processing.

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Bovary>

“Availability

Bovary is an IS system which was developed as a research prototype. It is not available for download.

Technical Description

Bovary IS system introduces a new approach to Interactive Storytelling, which aims at reconciling narrative actions with the characters’ attributed psychology as stated in the narrative. The long-term goal is to be able to explore Interactive Storytelling for those narrative genres which are based on the characters’ psychology rather than solely on their actions. The story representation makes use of the formalisation by Flaubert himself of his novel Madame Bovary, which includes a detailed account of characters’ desires and feelings.

It is a **prototype in which characters’ behaviour is driven by a real-time search-based planning system applying operators whose content is based on a specific inventory of feelings.** Furthermore, the actual pattern of evolution of the character’s plan, as measured through the variation of the search heuristic, is used to confer a sense of awareness to the characters, which can be used to generate feelings about its overall situation, from feelings of boredom to hope.

Bovary is fully integrated with a 3D real-time visualisation engine, using the UT2003 game engine.

Authoring Description

The following paper provides a critical view on the creation of suitable IS authoring tools. It also provides a description of the processes involved in building the specific set of tools for the creation of plan-based narratives for the Bovary IS system.

Pizzi, D. and Cavazza, M., 2008. From Debugging to Authoring: Adapting Productivity Tools to Narrative Content Description. First Joint Conference on Interactive Digital Storytelling (ICIDS), Erfurt, Germany, November 2008, pp. 285-296. [1]

Strong Points

One step beyond action-based AI planners.

Generativity of the emotional based planning system.

Dramatisation of narrative situations.

Limitations

Control of the quality of the narrative generated is a typical issue in planning-based system.

Main Publications

Pizzi, D. and Cavazza, M. (2007). Affective Storytelling Based on Characters' Feelings. AAAI Fall Symposium on Intelligent Narrative Technologies, Arlington, Virginia, November 2007. [2]

Cavazza, M., Lugrin J-L., Pizzi, D., and Charles, F. (2007). Madame Bovary on the Holodeck: Immersive Interactive Storytelling. ACM Multimedia 2007, Augsburg, Germany. [3]

Cavazza, M., Pizzi, D., Charles, F., Vogt, T., André, E. (2009). Emotional Input for Character-based Interactive Storytelling. The Eighth International Conference on Autonomous Agents and Multiagent Systems (AAMAS), Budapest, Hungary, May 2009, pp. 313-320. [4]

Supporting Narrative Theories

Bovary is strongly linked to a computational model of roles and influences between characters from Brémond.

Computational Model

Bovary relies on AI planning tools and techniques, namely HSP planner, based on STRIPS representation, prior to pddl.

Type of interaction

Text-based NL input

An extension of the system was developed using emotional speech input (EmoVoice) called EmoEmma”

In Arinjabjarnar & co: “The BARDS system uses a Heuristic Search Planner (HSP) with RTA* to plan for emotional development in the characters, rather than for actions [50, 49]. The group use an ontology created by Gustave Flaubert as the basis for the planner. Flaubert’s novel, Madame Bovary [26], provides the test scenario. The user can use natural language to make comments which may cause other characters to react. Figure 14. The influence of a NL utterance in BARDS [49] emotionally and thus change the story, see figure 14. For instance a woman in love with a character other than her husband may feel guilt when reminded of her children. The effect will vary depending on the characters’ feelings. This is a novel approach, in which the user takes the role of an audience rather than a user, but an audience able to influence the generated story.”

Additional reference:

D. Pizzi, F. Charles, J. Lugin, and M. Cavazza, ‘Interactive storytelling with literary feelings’, in Proceedings of the Second International Conference on Affective Computing and Intelligent Interaction (ACII), Lisbon, Portugal, (September 2007).

Context-Aware Architecture\A Simple Story

Pittarello, Fabio. "A Simple Story: Using an Agents’ Based Context-Aware Architecture for Storytelling." International Conference on Technologies for Interactive Digital Storytelling and Entertainment. Springer, Berlin, Heidelberg, 2006.

Abstract: “Context-aware systems are conceived for diminishing the cognitive load of users that perform tasks such as retrieving information or accessing services. A wide range of applications is available, with emphasis on tourism, cultural heritage and e-commerce. This work explores the possibility of using an agents based context-aware architecture for controlling the evolution of a story on the basis of different types of context, including the user profile, the location, the user history and time. In order to prove the suitability of such architecture to the domain of storytelling, a real novel by a famous Italian writer was rewritten in the form of an interactive 3D world where users play the roles of the different characters of the story. “

DED (Directed Emergent Drama)\Dynamic Plot Generation Engine\Rational Dialogue Engine\The Murder Mystery Drama

By Maria Arinjabjarnar and Daniel Kudenko

Drama management system centered on narrative schemas (generalized outline for non-linear potential scenes). The prototype project, a murder mystery, integrates two other projects developed by

Arinbjarnar in parallel: the dynamic plot generation engine and rational dialogue editor. Both play secondary roles in the overlying structure, which is of primary interest.

Abstract: “[...]We propose to divide the drama into narrative episodes which we call schemas. Schemas are used by a director and a set of actors to structure the drama so that it emerges into a fully developed drama. The schemas are pre-authored in an abstract way such that they can be deployed multiple times in the same drama, which removes the authoring bottleneck. In this article, we define the structure of the schemas and how the director and actors use schemas in Directed Emergent Drama (DED).”

“The DED architecture is intended for any type of drama, we choose the murder mystery as an initial set-up because it is very structured and contains well known motifs. A typical English murder mystery can be divided into 3 acts, a prologue, a large middle part and an epilogue [15] and it is shaped into a dramatic arc with exposition, complication, climax, fall, and closure.”

In Arinbjarnar & co: “The directed emergent drama (DED) [4] engine has a director agent that uses schemas to structure an emergent drama. There is a set of actor agents, who play characters in the unfolding drama using the schemas as a guide. Schemas are structures which contain: goals, a knowledge base; and actions for the actors and the user of the drama. The basic DED architecture can be seen in figure 12. This figure shows that all communication between the director and the actors is through schemas. The director never interacts directly with the user or actors. The user will have all the same options for interaction as the actors have. All of the interaction options available to other characters will also be possible for the user.

The characters of the drama are played by autonomous actor agents who use belief networks as their core decision mechanism. The actor agents use the Rational Dialog (RD) engine introduced in [2] which has now been extended and optimised for use by the actors in DED. The RD engine uses extended object-oriented Bayesian networks and Multi-Agent Influence Diagrams [30]. This is a game theoretic approach to a single agent decision problem in a multi-agent environment which provides linear growth with respect to the number of actions considered.

The schemas structure the emergent drama by giving actors goals, a knowledge base and appropriate actions to choose from. Schemas are generic structures which used by the director to structure improvisational acting, they are not small pre-authored stories. This means that an actor receives goals to accomplish and relevant actions from which they can choose. The actions are further supported by a knowledge base which the actor can use to determine appropriate actions with respect to the character’s emotion, situation and personality. This facilitates the emergence of a drama in which a user can interact with the actors and storyworld freely and directly influence the unfolding drama.

The drama emerges from the interaction of the user and the actors interactions within the schemas deployed by the director. At the outset DED draws a basic plot, using the dynamic plot generating engine (DPGE) [3] to create a past for characters and their relationships. This provides a background

story for the drama. This is recent research and has yet to be fully implemented with a complete drama, set of characters and a user.”

M. Arinbjarnar, ‘Rational dialog in interactive games’, in proceedings of AAAI Fall Symposium on Intelligent Narrative Technologies, Westin Arlington Gateway, Arlington, Virginia, (2007).

M. Arinbjarnar, ‘Dynamic plot generation engine’, in proceedings of the Workshop on Integrating Technologies for Interactive Stories, Playadel Carmen, Mexico, (2008).²

M. Arinbjarnar and D. Kudenko, ‘Schemas in directed emergent drama’, in proceedings of the 1st Joint International Conference on Interactive Digital Storytelling ICIDS08, Erfurt, Germany, (2008).

DeathKitchen

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/DeathKitchen>

IRIS project. AI-based object behavior procedural generation.

“Availability

DeathKitchen is an IS system which was developed as a **research prototype**. It is not available for download.

Technical Description

This system describes a method supporting the AI-based simulation of object behaviour, so that interactive narrative can feature the physical environment inhabited by the player character as an “actor”. The prototype has been **developed on top of the Unreal Tournament game engine** and relies on a **“causal engine”, which essentially bypasses the native Physics engine to generate alternative consequences to player interventions.** It operates using a small depth-bound planning system which determines the most appropriate object behaviours following player interaction. The prototype is illustrated through a **test application called “Death Kitchen”, freely inspired from various thriller and horror films, in which the kitchen is plotting against the player** character to generate domestic accidents. DeathKitchen is fully integrated with a 3D real-time visualisation engine, using the UT2003 game engine.

Strong Points

User interactions and reactive behaviours generated for the objects by the planning system.

Causal chaining of events based on objects behaviours.

Limitations

² Unlocatble in Google Scholar.

Authoring of objects behaviours can be complex.

Main Publications

Lugrin, J-L. and Cavazza, M. (2006). AI-based World Behaviour for Emergent Narratives. ACM SIGCHI International Conference on Advances in Computer Entertainment Technology, ACE 2006, Hollywood, California, USA, June. [1]

Type of interaction

Physical intervention of the user within the virtual environment via its avatar.”

Façade\Beat-based drama manager

<http://www.interactivestory.net/>

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Facade>

IRIS project (as it turns out). Released 2005.

Mateas casts Façade as examlyfing his overlying architecture for beat-based IDN drama manager systems.

“Technical Description

The only published, complete interactive drama, Façade is a reference point for most research done in the field. Façade comprises a 3D story world, intelligent autonomous agents, broad and shallow natural language processing and a drama manager.

The drama manager is based on the notion of beats. Beats are small, interactive scenes (the user can influence their execution) and interruptable (a beat can interrupt another beat, beats can be interwoven). During the interaction, the user seamlessly navigates from beat to beat depending on his actions.

Beats drive the autonomous characters, which react to the user's actions. The behaviour of these characters are programmed with ABL, a specific language particularly suited for joining interactions between two characters.

Beats take preconditions. In particular, they trigger according to the current tension which is regularly updated during the drama, following an Aristotelian arc. This allows low tension beats to happen before high tension beats, which constitutes a kind of partial ordering.

As a result, Façade achieves local agency, while at the global level, user's influence is more limited, in favor of a story-arc driven ordering.

Result Description (end user perspective)

Façade is a 20 minute replayable interactive drama.

The user plays a long time friend of a couple in the middle of a marital breakdown. The scene takes place in the couple's upscale apartment during what is supposed to be an evening dinner invitation to catch up. Through moderate character manipulation (movement, direction) and free text dialogue, the user can interact with the couple and attempt to ease the flames of the marital dispute.

Authoring Description

Façade does not offer an authoring environment to modify the story. The functionality of the tool, as well as it's dramatic content were programmed together as a whole. **However, internal tools have been developed, such as the ABL languages, to facilitate content entering.**

The close link between authoring and programming is defended in (Mateas & Stern 2005) where the Façade authors argue that authors of interactive fiction should necessarily possess programming skills in order to produce effective interactive stories.

Strong Points

Façade is the only/first complete IS system published. **The use of NLP, believable agents, immersion in a 3D world, particularly well accomplished agency, all contribute to put Façade in a league of its own. Façade's primary architectural contribution, besides achieving the integration itself, is architectural support for authoring dramatic beats, an architectural level which combines aspects of character and story (Mateas & Stern 2003).**

Limitations

Global agency is limited: User's actions (mainly typed text) have little explicit consequence on future developments of the story.

Although it was not designed with the intention to be an authoring tool, Façade is often cited in IS related articles regarding the closed-ness of the system. Emphasizing the importance of an easily authorable system compared to the two years it took to write Façade. However, according to the authors, developing a complete system, forced issues to be addressed that otherwise get ignored or swept under the rug when developing only a piece of an architecture.

Main Publications

Mateas, M. & Stern, A. (2003). Integrating Plot, Character and Natural Language Processing in the Interactive Drama Façade. Proceedings of the 1st International Conference on Technologies for Interactive Digital Storytelling and Entertainment (TIDSE) 2003. Darmstadt, Germany.

Mateas, M. & Stern, A. (2004). A Behavior Language: Joint Action and Behavioral Idioms. In Predinger, H. and Ishiuka, M. (Eds), Life-like Characters: Tools, Affective Functions and Applications, Springer Verlag.

Mateas, M. & Stern, A. (2005). Procedural Authorship: A Case-Study Of the Interactive Drama Façade. Digital Arts and Culture - DAC (Copenhagen).

Sali, Serdar, and Michael Mateas. "Using information visualization to understand interactive narrative: A case study on Façade." International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2011.

Full list: <http://www.interactivestory.net/#publications>

Supporting Narrative Theories

The various dramatic sequences follow well formed Aristotelian arcs.

Computational Model

Managing beats is based on a precondition/postcondition model. Autonomous agents are based on a language specifically developed for Façade called ABL (Mateas & Stern 2003).

Type of interaction

Free text entry for conversation with Grace and Trip, arrow keys for movement around the environment."

I-Storytelling

IRIS project

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/I-Storytelling>

I-Storytelling (aka Friends) is an IS system which was developed as a research prototype. It is not available for download.

Technical Description

The interest here is in stories that have a well-defined storyline, from which many variants can unfold based on characters' interaction of user intervention. While many researchers agree on the use of planning formalisms to support characters' behaviour, there was little research in the representation of narrative knowledge itself, apart from the recurring reference to narrative functions.

NOLIST (non-linear interactive storytelling)\NOLIST Murder Game

Abstract: “[...]We propose non-linear interactive storytelling (NOLIST) as a first step towards developing games with a high degree of interaction and a coherent narrative. The main idea is that the narrative is not fixed from the beginning but instead constructed as the game progresses based on the player’s interaction. We provide a simple model that allows writers to specify a NOLIST as a set of actions which the game engine then combines to create the narrative. Finally, we propose to develop a game engine using Bayesian networks to model the probability of the possible narratives that can be created from the actions, and use this knowledge to create better narratives.”

“To help illustrate non-linear interactive stories and actions we provide an example. The example is a murder story where the player takes the role of an investigator trying to solve a murder case by investigating the crime scene and interviewing the three suspects named A, B, and C. Figure 2 depicts the action hierarchy for the murder story. At the top level (1) is the Murder story action with a content of five actions: Investigate the crime scene (1.1), Interview A, B, and C (1.2-1.4), and Reveal the murderer (1.5)”

In Arinbjarnar & co: “the non-linear interactive storytelling game engine (NOLIST) [9] a Bayesian network is utilised in creating a murder mystery. The Bayesian network dynamically changes in response to actions and observations made by the user. It is not preset but combines the user’s actions and logical inference to determine details of the story, including the identity of the murderer. For example if the user finds a body and a gun lying beside the body then the probability that the murder weapon was the gun increases. Thus NOLIST creates the past of the story in response to the user’s interactions.

NOLIST is highly adaptive to user interaction. However since users are likely to play games in a similar manner each time (in accordance with their player type [15]) they will probably experience a story with insignificant differences on subsequent experiences.”

Player Preference Module

By Manu Sharma & co, Georgia Tech

[An approach to constructing a drama manager that constructs the story arc – possible choices\branching points, etc – according to its ‘read’ of player preference. Prototype was implemented in the game Anchorhead.](#)

“[...]This paper presents an approach that uses a case based player preference modeling component that predicts an interestingness value for a particular plot point within the story. These interestingness values are based on real human players’ interactions with the story. We also present a drama manager that uses a search process (based on the expectimax algorithm) and combines the author specified aesthetic values with the player model.”

Sharma, Manu, et al. "Towards Player Preference Modeling for Drama Management in Interactive Stories." FLAIRS Conference. 2007.

Search-Based\Declarative-Optimization Drama Manger\SASCE

A category of interactive drama manager first conceived by the Phd disseartation of Peter William Weyhrauch, who developed the MOE sytem (see dead parser tools above). Nelson, Mateas & co. took the idea further by developing the declarative-optimization manager, which effectively informs the search function of the DM via player-statements, creating a deeper sense of narrative interactivity. Interestingly, just like Sharma & co's player-preference DM, it was utilized in a prototype that reproduces the interactive story Anchorhead.

Abstact (2006): [...] Declarative optimization-based drama management (DODM) casts the drama-management problem as an optimization problem: The author declaratively specifies a set of plot points in a story, a set of actions the drama manager can take, and an evaluation function that rates a particular story. The drama manager then takes the actions in a way that attempts to maximize story quality. Peter Weyhrauch reported good results using a variant of game-tree search to optimize the use of drama-manager actions. We attempt to replicate these results on another story, Anchorhead, and show that search does not perform very well in general, especially on larger and more complex stories.“

“Mateas & Stern [1] developed a beat-based drama manager for their interactive drama Fac,ade, using the concept of a dramatic beat. Beats are the smallest unit of change in dramatic value, where dramatic values are character and story attributes such as love, trust, and tension; at each point in the story, a beat-based drama manager selects one of the available beat-level actions. We hypothesize that this style of management makes beat-based drama managers particularly suited to tight story structures, where ideally all the activity in the story world contributes to the story. DODM, on the other hand, lends itself to more open-ended story structures”

In Arinbjarnar & co: “SASCE [47] is an adapted TD-learning method for interactive drama. This method determines, based on a pre-defined evaluation function, the apparent best route for the story, depending on the actions the user is expected to take at each stage, and thus that which will lead to the highest overall score. The routes for the drama are selected from the possible routes through a pre-defined plot graph. The actions the user is expected to take are determined by a computer simulated user. These simulations provide the training data.”

Weyhrauch, Peter William. Guiding interactive drama. Carnegie Mellon University, 1997.

M. J. Nelson, M. Mateas, D. L. Roberts, and C. L. Isbell. Declarative optimization-based drama management in the interactive fiction anchorhead. IEEE Computer Graphics and Applications (Special Issue on Interactive Narrative), 26(3):30–39, 2006.

M. J. Nelson, D. L. Roberts, C. L. Isbell, and M. Mateas. Reinforcement learning for declarative optimization-based drama management. In Proceedings of the Fifth International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS06), 2006.

Anchorhead wiki: <https://en.wikipedia.org/wiki/Anchorhead>

TDP (Targeted Trajectory Processing) Drama Managers

Drama management systems based on spatial calculation of potential trajectories between destination-points. Implemented in some AR interactive museum guide prototypes. Most work by Roberts & Isbell at Georgia Tech.

S. Bhat, D. L. Roberts, M. J. Nelson, C. L. Isbell, and M. Mateas. A globally optimal algorithm for ttd-mdps. In Proceedings of the Sixth International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS07), 2007.

A. S. Cantino, D. L. Roberts, and C. L. Isbell. Autonomous nondeterministic tour guides: Improving quality of experience with ttd-mdps. Technical Report GIT-IIC-07-02, School of Interactive Computing, College of Computing, Georgia Institute of Technology, 2007.

A. S. Cantino, D. L. Roberts, and C. L. Isbell. Autonomous nondeterministic tour guides: Improving quality of experience with ttd-mdps. In Proceedings of the Sixth International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS07), 2007.

D. L. Roberts, A. S. Cantino, and C. L. Isbell. Player autonomy versus designer intent: A case study of interactive tour guides. In Proceedings of the Third Conference and Artificial Intelligence for Interactive Digital Entertainment (AIIDE-07), 2007.

D. L. Roberts, M. J. Nelson, C. L. Isbell, M. Mates, and M. L. Littman. Targeting specific distributions of trajectories in mdps. In Proceedings of the 21st National Conference on Artificial Intelligence (AAAI-06), 2006.

D. L. Roberts, K. St. Clair, S. Bhat, and C. Isbell. Authorial idioms for target distributions in TTD-MDPs. In Proceedings of the 22nd Conference on Artificial Intelligence (AAAI-07), Vancouver, BC, 2007.

“Tell a Story About Anything”

Si, Mei. "Tell a story about anything." International Conference on Interactive Digital Storytelling. Springer, Cham, 2015.

Abstract: “With the fast development of internet technology, people can have easy access to a massive amount of information. The goal of this project is to provide a personal assistant for helping people explore large network of information by using narrative technologies. We propose an automated narration system that takes structured information and tailors the presentation to the user. It is aimed at presenting the information as an interesting and meaningful story by taking into consideration a combination of factors including topic consistency, novelty, user interests, and the user’s preferences in exploration style. We present preliminary results of using this system for presenting information about the 2008 Summer Olympics Games, followed by discussion and future work.”

U-Director

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/U-Director>

Availability

Non distributed prototype

Technical Description

Utility-based Director Agent (U-Director) is a director agent that monitors the storytelling according to narrative objectives, user states and storyworld states. It offers a narrative architecture that uses the dynamic decision network (Dean & Kanazawa, 1989). It selects the action to be performed during the unfolding of a story according to players' interaction and the storytelling. Narrative utility is maximized, according to various criteria such as plot progress, narrative flow, location flow, etc.

[...]U-DIRECTOR had been implemented in the Crystal Island storytelling environment. It consists in unfolding the specific story on Crystal Island.

Strong Points

U-DIRECTOR exploits recent advances in approximate Bayesian inference via stochastic sampling.

It is an emergent narrative approach that is directed by storytelling means.

Limitations

Results of the study indicate that the clustering algorithm's running time has the greatest variability and may not satisfy the performance requirements of interactive narrative.

Main Publications

Mott, B. W. and Lester, J. C. (2006). U-director: a decision-theoretic narrative planning architecture for storytelling environments. In Proceedings of the Fifth international Joint Conference on Autonomous Agents and Multiagent Systems (Hakodate, Japan, May 08 - 12, 2006). AAMAS '06. ACM, New York, NY, 977-984. [1]

Dean, T. and Kanazawa, K. (1989). A model for reasoning about persistence and causation. Computational Intelligence, 5(3), 142-150. [2]

Virtual Theater\Directed Improvisation

Stanford University

Early improvisation-based approach, partially inspired by Keith Johnstone's writing on Impro theater. Modeled into a number of drama-manager prototypes (such as the "Little Red Riding Hood system), but never an authoring tool.

Hayes-Roth, Barbara, Robert Van Gent, and Daniel Huber. "Acting in character." Creating personalities for synthetic actors. Springer, Berlin, Heidelberg, 1997. 92-112.

In Arinbjarnar & co: "The work of the Virtual Theater Project uses the concept of 'directed improvisation', in which improvisational actors follow directions (and constraints), and provide the detail. For example an actor could be instructed to walk to a table, and if they are playing an energetic character they may rush there. The virtual worlds are populated by actors who take the part of characters. The group worked on a number of different projects. In the LittleRed Riding Hood system the user could destroy the story but would not be presented with a new story as a result, instead they were able to observe how their actions would move the story away from its predetermined course. The group's Master-Servant scenarios involved the servant, through a series of postures, switching places with the master [29]. In the cybercafé scenario there are a number of customers and a waiter in a café. The user gives directions to one of the characters, which they will improvise (in accordance with the individualities of their assigned character) to follow. The actions of the characters, whether instructed by the user or the system, are incorporated into the plot graph structure."

More tools like this (not interesting enough for special listing):

Angelina – AI game designer

<https://www.youtube.com/watch?v=sz0hn3FXTwc>

Poetic generators by Nick Montfort

<http://www.nickm.com/poems/>

Procedural procedural-game-idea generator (great satire)

<https://tccoxon.itch.io/procedural-procedural-game-idea-generator>

Teatrix (IRIS)

<http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Teatrix>

Basic story generation system with possibility for real-time intervention in the story by spet-actors, along the same lines it can be scripted in advance to unfold in. Aimed at 8-10 year old children to improve some sort of literacy skills subset.

C.XI - Tangible\material UI tools

Definition: tools that facilitate tangible or material interfaces, that go beyond the screen and provide an IDN experience through digitally hybrid or digitally manipulated material, real-world objects. **The potential of such interfaces to IDN is immense, but largely unrealized as of yet - as these are at the moment mostly initial prototypes or attempts, sure to grow more significant and prominent to IDN works as technology advances.**

Wikipedia interactive art page – has information on tools used for interactive art project and that stand out in their physical interface potentialities.

https://en.wikipedia.org/wiki/Interactive_art

3D Tabletop

Not to be confused with the tabletop-RPG focused “3D Tabletop”, found on google search of the term

Halskov, Kim, Peter Dalsgaard, and Louise Bak Stolze. "Analysing engaging experiences with a tangible 3D tabletop." Proceedings of the 11th Conference on Advances in Computer Entertainment Technology. ACM, 2014.

Abstract: Tangible 3D tabletops are a novel type of interface, which combines tangible tabletop interaction with 3D projection in such a way that the tangible objects can be augmented with visual content corresponding to their physical shapes, positions and orientations on the tabletop. We present a specific tangible 3D tabletop installation, Projected Play, which was developed for and deployed at LEGO World, a four-day event at which visitors immerse themselves in the world of LEGO. The use of Projected Play was documented through observations, interviews and video recordings. We propose an analytical approach to understanding the perception and use of this type of installation building upon existing research into interaction in public spaces. We apply this approach to analyse how people interacted with and experienced the installation. The focal points of the analytical approach include social, cultural and physical aspects of experience, interaction patterns and forms of engagement. Moreover, we critically discuss the potentials and limitations of both the analytical approach and the installation.

Arduino

<https://www.arduino.cc/>

<https://en.wikipedia.org/wiki/Arduino>

“Arduino is an open source computer hardware and software company, project, and user community that designs and manufactures single-board microcontrollers and microcontroller kits for building digital devices and interactive objects that can sense and control objects in the physical world. The project's products are distributed as open-source hardware and software, which are licensed under the GNU Lesser General Public License (LGPL) or the GNU General Public License (GPL),[1] permitting the manufacture of Arduino boards and software distribution by anyone. Arduino boards are available commercially in preassembled form, or as do-it-yourself (DIY) kits.”

DiME

<https://www.youtube.com/watch?v=H6mE5jA68Wc>

Chu, Sharon Lynn, Francis Quek, and Kumar Sridharamurthy. "Exploring performative authoring as a story creation approach for children." International Conference on Interactive Digital Storytelling. Springer, Cham, 2014.

Chu, Sharon Lynn, Francis Quek, and Kumar Sridharamurthy. "Ready... action!: a performative authoring system for children to create animated stories." Proceedings of the 11th Conference on Advances in Computer Entertainment Technology. ACM, 2014.

Abstract: “We propose performative authoring, an approach for children to author digital animated stories using pretend play or story enactment. Using a systematic methodology, we designed and developed DiME, a prototype system to explore how children may make use of performative authoring to create stories. Findings showed that children greatly enjoyed the authoring approach, and that DiME supported the child’s imagination of characters, objects and environments during enactment. However, enactment for authoring lacked narrative structuring and the affordance for rapid iterative editing that is critical to creativity. We conclude that performative authoring has great potential to facilitate and even improve children’s storytelling.

I-CubeX

<https://en.wikipedia.org/wiki/I-CubeX>

“I-CubeX comprises a system of sensors, actuators and interfaces that are configured by a personal computer. Using MIDI, Bluetooth or the Universal Serial Bus (USB) as the basis for all communication, the complexity is managed behind a variety of software tools, including an end-user configuration editor, Max (software) plugins, and a C++ Application Programming Interface (API), which allows applications to be developed in Mac OS X, Linux and Windows operating systems.

Usage is primarily focused on allowing exploration and construction of alternative physical computer interaction systems, but have most notably been adopted by music enthusiasts, as they greatly simplify musical instrument mods and creation of novel electronic musical instruments, MIDI controllers and audio control surfaces (such as presented at NIME), e.g. for electronic music generation, and visual artists, as they greatly simplify interactive installation art and electronic art (such as presented at Ars Electronica and SIGGRAPH). In both cases, it is extensively used for teaching.[1][2][3][4][5][6][7] It allows the construction of complex interactive systems out of simpler components. I-CubeX is designed and produced by Infusion Systems.”

Immerse

<http://www.interactivestory.net/>

By Michael Mateas\playabl.AI. Released 2016. Gestural capturing system centered on embodied interaction with AI agents.

“IMMERSE - STRATEGIC SOCIAL INTERACTION MODULES

A social skills training simulation featuring AI-based characters with realtime gesture, voice and facial recognition. Teaches de-escalation and rapport building skills, for police and military recruits.

Co-developed by the Center for Games and Playable Media at UC Santa Cruz including the Playabl team, Raytheon BBN and SRI Princeton. Funded by DARPA. Wired.com article on IMMERSE / SSIM.”

Youtube video: <https://www.youtube.com/watch?v=2MCQdA6zOs0>

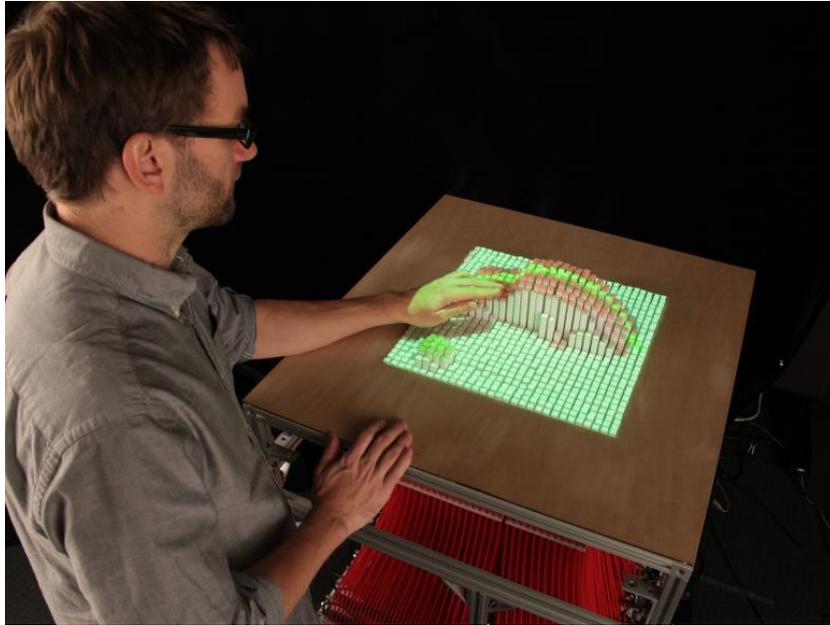
Inform

<http://tangible.media.mit.edu/project/inform/>

<https://vimeo.com/79179138>

material interaction interface generation tool by the MIT Tangible media group.

More of a unique technological system than a tool at this point, but gives a sense of immense interactive potential of mutable tangible interfaces.



inFORM is a Dynamic Shape Display that can render 3D content physically, so users can interact with digital information in a tangible way. inFORM can also interact with the physical world around it, for example moving objects on the table's surface. Remote participants in a video conference can be displayed physically, allowing for a strong sense of presence and the ability to interact physically at a distance. inFORM is a step toward our vision of Radical Atoms: tangible.media.mit.edu/vision/

JabberStamp

Dead tool. Created by MIT media lab, run 2005-2008.

<http://tangible.media.mit.edu/project/jabberstamp/>

<https://vimeo.com/44541844>

“Jabberstamp is the the first tool that allows children to synthesize their drawings and voices. To use Jabberstamp, children create drawings, collages or paintings on normal paper. They press a special rubber stamp onto the page to record sounds into their drawings. When children touch the marks of the stamp with a small trumpet, they can hear the sounds playback, retelling the stories they have created

Children ages 4+ can use Jabberstamp to embed names, narratives, characters' voices and environmental sound effects in their original drawings. Children's compositions help them communicate their stories with peers and adults, and allow them to record and situate stories in personally meaningful contexts to share with others, before they have mastered writing.

Handimation

<https://www.sics.se/projects/tangible-handimation>

Svensson, Anders, Staffan Björk, and Karl-Petter Åkesson. "Tangible handimation real-time animation with a sequencer-based tangible interface." Proceedings of the 5th Nordic conference on Human-computer interaction: building bridges. ACM, 2008.

Phylactery

Chaudhari, Charu, and Joshua Tanenbaum. "Phylactery: An Authoring Platform for Object Stories." International Conference on Interactive Digital Storytelling. Springer, Cham, 2016.

Abstract: "In this work, we describe **Phylactery, a hybrid physical/digital system for authoring interactive stories across collections of objects**. Unlike many Interactive Digital Storytelling (IDS) systems, which are concerned with the representations of formal narrative structures within software, or with the simulation of high-fidelity narrative environments populated by humanlike agents, Phylactery is focused on the act of storytelling as it occurs among humans in the physical world. It is designed to connect personal narratives, memories, and rituals of storytelling with material containers by associating spoken stories with physical objects. Phylactery can be used to imbue the physical world with stories as both a formal authoring platform, and an informal and playful narrative technology. In this way, our system participates in older traditions of reminiscence, memory transmission, and heritage preservation through the collection of meaningful objects."

Inspired by their previous project, The Reading Glove (see below).

Sugarcane Island with Alfred

http://tecfalabs.unige.ch/mediawiki-narrative/index.php/Sugarcane_Island_with_Alfred

IRIS project

Not a tool, more of a one-of interface. But this poses an issue – while its clear that any one-off work in the commercial\general sector cannot be considered, an academic project meant to serve as prototype for a more general interaction type and the interface required to create it can conceivably count.

Anyhow, it's listed under "IS systems" in the IRIS wiki and is very interesting (also in relation to Noam's embodied interface project), so I'm including it here for now.

"Availability

Sugarcane Island with Alfred is an IS system which was developed as a research prototype. It is not available for download. Nevertheless, you can get most of the technical components used for implementing the system.

Technical Description

Sugarcane Island with Alfred is a two player Interactive Storytelling application that adapts a part of the story of the game book "Sugarcane Island" by Edward Packard. The users find themselves stranded on an unknown island and need to find a way to survive. The story is narrated by an embodied virtual character named Alfred. Decisions between the text parts are realized with a Wizard-of-Oz speech input. Alfred asks for a decision and the users have to speak out their choice. Full Body Gestures are added in Quick Time Events, where the users have to perform a specific gesture given a limited amount of time. The recognition of these gestures using Microsoft Kinect is done with the FUBI Full Body Interaction Framework.

The general application runs on the Horde3D GameEngine. In Addition, SceneMaker was used to model and execute the story as a hierarchical finite state machine extended with multimodal scene scripts that consist of the text to be spoken including additional commands like animations or sounds.

Strong Points

The potential of this ITS application lies in the interaction interface designed for two players. It uses the Microsoft Kinect sensor to recognize full body gestures of the users that do not have to hold or wear any interaction device. The story itself is adapted from the game book Sugarcane Island. The strength of this approach is, that there is no need for writing a complex story, but the given story can be directly used to investigate the interaction interface.

Limitations

The full body gestures are currently applied in so-called Quick Time Events, where the users have to perform a specific gesture during a limited amount of time. A next step would be to provide real decisions by offering a choice of different gestures or even some kind of gesture syntax.



Main Publications

Felix Kistler, Dominik Sollfrank, Nikolaus Bee, and Elisabeth André, Full Body Gestures enhancing a Game Book for Interactive Story Telling, Proc. of the 4th Int. Conf. on Interactive Digital Storytelling, 2011

Computational Model

The story is **modeled with SceneMaker** as a hierarchical finite state machine extended with multimodal scene scripts.

Type of interaction

Interaction using Microsoft Kinect to recognize full body gestures. In addition, Wizard-of-Oz speech input for decisions.”

Youtube video: <https://www.youtube.com/watch?v=tUGqmatPQkk>

Video Puppetry

(See interactive video tools above)

The Reading Glove

Tanenbaum, Joshua, Karen Tanenbaum, and Alissa Antle. "The Reading Glove: designing interactions for object-based tangible storytelling." Proceedings of the 1st Augmented Human International Conference. ACM, 2010.

Tanenbaum, Karen, et al. "Experiencing the reading glove." Proceedings of the fifth international conference on Tangible, embedded, and embodied interaction. ACM, 2011.

Tanenbaum, Joshua, et al. "Authoring tangible interactive narratives using cognitive hyperlinks." Proceedings of the Intelligent Narrative Technologies III Workshop. ACM, 2010.

Tanenbaum, Joshua, and Karen Tanenbaum. "The reading glove: a non-linear adaptive tangible narrative." International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2011.

ICIDS abstract: "In this paper we describe The Reading Glove: a non-linear adaptive tangible narrative system in which interactors piece together a narrative puzzle by interacting with a collection of physical artifacts. The Reading Glove uses an adaptive system to assist the reader in making sense of the complicated web of narrative information."

Introduction: "The Reading Glove system consists of a wearable glove-based interface and tabletop display surface that provides an interactive narrative experience grounded in a set of physical objects. Interactors pick up RFID-tagged objects to activate audio story fragments associated with that particular object. The tabletop displays recommendations on which objects to select next using a knowledge-based reasoning engine to guide the interactor through the non-linear narrative. As a research project, the Reading Glove explores how interactors experience the adaptive components of the system, as well as their understanding of the narrative and the impact of the tangible and wearable interaction. "

Wiring

<http://wiring.org.co/>

Wiki page:

"Wiring is an open-source electronics prototyping platform composed of a programming language, an integrated development environment (IDE), and a single-board microcontroller. It was developed starting in 2003 by Hernando Barragán.

Barragán started the project at the Interaction Design Institute Ivrea. The project is currently developed at the School of Architecture and Design at the Universidad de Los Andes in Bogotá, Colombia.

Wiring builds on Processing, an open project initiated by Casey Reas and Benjamin Fry, both formerly of the Aesthetics and Computation Group at the MIT Media Lab.

The documentation was created with software designers and artists in mind.[citation needed] Project experts, intermediate developers, and beginners from around the world share ideas, knowledge and their collective experience as a project community. Wiring makes it easy to create software for controlling devices attached to the electronics board to create all kinds of interactive devices. The concept of developing is to write a few lines of code, connect a few electronic components to the Wiring hardware and observe, for example, that a motion sensor controls a light when a person approaches it, write a few more lines, add another sensor, and see how this light changes when the illumination level in a room decreases. This process is called sketching with hardware; explore ideas quickly, select the more interesting ones, refine and produce prototypes in an iterative process.”

[https://en.wikipedia.org/wiki/Wiring_\(development_platform\)](https://en.wikipedia.org/wiki/Wiring_(development_platform))

C.XII – Writing aid tools (Interactive tools for linear writing and film)

Definition: Tools meant to aid and facilitate the process of linear writing (often screenwriting) in some interactive form or another. Includes story visualization\storyboard creation tools, integrated environments for story development, and collaborative writing tools and web-portals. While non of these is particularly meant for IDN work, some of these tools can facilitate IDN authoring, as sub-tools, in their current form (for example by allowing for more comfortable mapping of the narrative world), while others are potentially adaptable for such purposes.

AntWriter

The AntWriter Improvisational Writing System: Visualizing and Coordinating Upcoming Actions

Mitchell, Alex, et al. "The AntWriter Improvisational Writing System: Visualizing and Coordinating Upcoming Actions." International Conference on Interactive Digital Storytelling. Springer, Cham, 2017.

Abstract: "Improvisational storytelling requires participants to be aware of collaborators' actions, and to anticipate each other's upcoming actions so as to create a coherent story. This paper describes the AntWriter improvisational writing system, a computer-based shared workspace for collaborative storytelling. Our system uses a "temporal window" to provide a visualization of a short slice of time where participants can coordinate their upcoming actions during real-time text-based storytelling performances. By providing a concrete, manipulable representation of upcoming actions, AntWriter aims to support anticipation of collaborators' upcoming actions as a means to encourage extremely short-term planning and coordination within real-time collaboration, without losing the immediacy and spontaneity of improvisational storytelling."

Articy

<https://www.nevigo.com/en/articydraft/overview/>

Most interactive\game-oriented of this list. There are, of course, many such game-creation aids. But this one seems uniquely focused on narrative elements.

"A proprietary tool that can be customized for a variety of engines. Probably best tailored for large games, it allows mapping your story and its logics, keeping databases of objects, imports screenplay files from Final Draft, and connects directly to Unity"

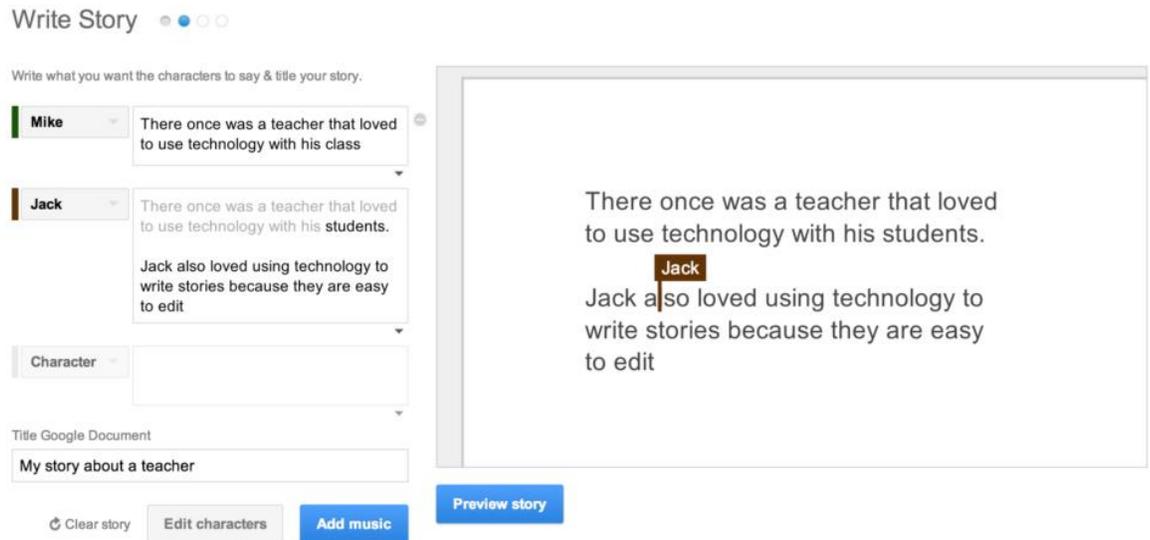
Google Story Builder

<http://usingtechnologybetter.com/google-story-builder/>

Google Story Builder is a fun Google tool that will get your students developing their basic writing skills.

You don't need a Google account to participate and younger students can easily navigate through the Google Story Builder steps.

Once the students have finished writing their story, they can add music and watch the animated video of their writing experience.



iBooks Author

<https://www.apple.com/lae/ibooks-author/>

“Create and publish amazing books for iPad and Mac.

Available free on the Mac App Store, iBooks Author is an amazing app that allows anyone to create beautiful iBooks Textbooks — and just about any other kind of book — for iPad and Mac. The app has been beautifully redesigned for OS X Yosemite. With galleries, video, interactive diagrams, 3D objects, mathematical expressions, and more, these books bring content to life in ways the printed page never could.”

From Deglaucy’s list (not for interactive media, but can provide some info on creative writing interfaces, features and visualizations):

Plotbot

<http://www.plotbot.com>

“Write better. Together. Write screenplays in your browser”

FinalDraft 10

<https://www.finaldraft.com>

“the world’s number-one selling screenwriting software”

AmazonStoryWriter

<https://storywriter.amazon.com/dashboard>

“Bring your story to life with AmazonStoryWriter – our free Screenwriting tool”

WriterDuet

<https://writerduet.com>

““The most intuitive, most user-friendly scriptwriting software I've ever used”

Real-Time: Any number of writers can work together or at different times, on opposite ends of the script or even the same line.

Outline: Edit, color, and move index cards on our real-time collaborative corkboard. Display the text as reference in your script space.”

Scrivener

<https://www.literatureandlatte.com/scrivener/overview>

“Scrivener is the go-to app for writers of all kinds, used every day by best-selling novelists, screenwriters, non-fiction writers, students, academics, lawyers, journalists, translators and more. Scrivener won't tell you how to write—it simply provides everything you need to start writing and keep writing.”

Though its basically a glorified writing platform not meant for IDN, the comfortable UI and writing features seem quite fitting for IF work. Emily short is apparently using scrivener and Microsoft OneNote as a draft for the stroy, and later C# and Unity, to kind of create a specified coding infrastructure for each of her games. The post seems to imply that serious IF writers with programming know-how such as herself still lack a do-it-all tool.

<https://emshort.blog/2018/01/09/mailbag-code-and-writing/#more-37855>

“I am working on a CYOA sandbox visual novel project. My buddy wrote a framework in C# / Unity and I’m currently writing the story in OneNote / Scrivener with articy:draft doing a lot of the node-work / structural organization. I used SimpleMind to do some high-level mapping for the sandbox but it’s been very clunky. I reverted to using Excel so I could bring direct mathematical tests into my work for planning and it’s been really tough to combine the cell-based organizational structure with blocks of text.

Creatively – I don’t write well in little bubbles...at all. I prefer writing in a Word / WordPerfect / Scrivener / Notepad setting. It’s easiest for me to see all the text, re-read what I need to, edit, etc. I’m at a point where the story is getting difficult to test / debug / and translate into Unity. At the end of the day – whatever tools I use – I have to be able to

hand my work over to the developer and make sure he understands everything in as neat / concise a manner as possible.

[...]

That still leaves a big question, though, which is how your hypothetical authoring file should specify all the features that you need to describe. Here what you're doing is coming up with a template that captures consistently repeated design elements, and probably streamlining any unusual, unrepeated design elements or generalizing them into something repeatable.

This is still far shy of really writing your own IF language or tool because you're creating a structure that is designed only and specifically for your one game, meaning you don't have to work out all the abstractions that would be required for a reusable, multi-game system — but it gives you some of the leverage of having such a system, and it's the prototyping point from which a lot of more mature IF languages begin."

StoryFactory

Bída, Michal, et al. "StoryFactory—A Tool for Scripting Machinimas in Unreal Engine 2 and UDK." International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2011.

Abstract: "As part of our broader initiative on promoting the education in the field of computer science and ICT at high schools and universities, we have created the StoryFactory tool, which enables students to script short movies in a 3D virtual world. In an engaging way, StoryFactory introduces challenges posed by scripting 3D virtual characters and screenwriting. The tool is supposed to be used in ICT and/or media education classes. Here, we present the tool along with first results from its evaluations. "

Story Touch

<http://storytouch.com/>

"Scriptwriting at your fingertips – writing and analyzing scripts made easy
The revolutionary software that offers more than writing! See your screenplay in a timeline and use exclusive tools to make a thorough structural and dramatic analysis. Share your comments intuitively - a professional scriptdoctoring made easier. Every good film starts with a good script. Have the tools to write the best. The Story Touch was created by writers. That's why it knows what you need."

Trelby

<http://www.trelby.org/>

"A free, multiplatform, feature-rich screenwriting program!

Trelby is simple, fast and elegantly laid out to make screenwriting simple. It is infinitely configurable.

Trelby is free software, that you can contribute to.

Features

Screenplay editor: Enforces correct script format and pagination, auto-completion, and spell checking.

Multiplatform : Behaves identically on all platforms, generating the exact same output.

Choice of view: Multiple views, including draft view, WYSIWYG mode, and fullscreen to suit your writing style.

Name database: Character name database containing over 200,000 names from various countries.

Reporting: Scene/location/character/dialogue reports.

Compare: Ability to compare scripts, so you know what changed between versions.

Import: Screenplay formatted text, Final Draft XML (.fdx), Celtx (.celtx), Fountain (.fountain), Adobe Story (.astx) and Fade In Pro (.fadein).

Export: PDF, formatted text, HTML, RTF, Final Draft XML (.fdx) and Fountain (.fountain).

PDF: Built-in, highly configurable PDF generator. Supports embedding your chosen font. Also supports generating PDFs with custom watermarks, to help track shared files.

Free software: Licensed under the GPL, Trelby welcomes developers and screenwriters to contribute in making it more useful.

Storyist

<http://storyist.com>

“A powerful writing environment for novelists and screenwriters

Do you have a story to tell? Unlike conventional word processors, Storyist helps you track your plot, characters, and settings, and keeps all of your writing organized and accessible—so you can focus on telling your story.”

ScriptBuddy

<https://www.scriptbuddy.com>

“Web-based screenwriting software”

Movie Magic Screenwriter 6

<http://www.screenplay.com/catalog/product/view/id/30/category/8>

Basically prides itself on being most up-to-date with Hollywood standards. Integrates with “Dramatica” and “StoryView”

Highland

<https://quoteunquoteapps.com/highland/#screen-preview>

“Distraction-free screenwriting.

Designed by the team led by screenwriter John August, Highland is the award-winning screenplay editor that lets you focus on the words, not margins.”

Fade In

<https://www.fadeinpro.com>

Fade In Professional Screenwriting Software is the most advanced software used by professionals writing for motion pictures, television, video games, the stage, radio, and more.

<https://www.fadeinpro.com/page.pl?content=comparison>

Comparison to 4 other similar tools – Final Draft 10, Movie Magic Screenwriter 6, Adobe Story Plus, Celtx Standard\Plus

Adobe Story CC

<https://story.adobe.com/#/projects>

Adobe Story CC lets you write screenplays and scripts quickly, use scripts to generate schedules and production reports, and collaborate online. Part of the Adobe Creative Cloud, Adobe Story CC helps production run smoothly from planning to post-production.

User guide - <https://helpx.adobe.com/story/user-guide.html>

Celtx tools

<https://www.celtx.com/pricing.html>

“Simplify Your Pre-Production Workflow

Join 5 million creatives using the all-in-one system for video planning.

Write the script, prepare the shoot, and take your cast and crew into production.

Why Use Celtx?

From script to shoot, Celtx kickstarts your production with cloud-based planning tools to create better content faster.

WATCH VIDEO

GO TO CAMERA IN FEWER STEPS

CONCEPT TO COMPLETE

Write, breakdown, storyboard, schedule and budget your productions.

ONE FILE TO RULE THEM ALL

Everyone works off one master file so productions are better organized.

TEAM TAILORED WORKFLOW

Simple to learn, easy to use & designed to facilitate real-time collaboration.

ANYTIME, ANYWHERE

Work online or offline with mobile apps for iPhone, iPad and Android.

A COMPLETE PRE-PRODUCTION TOOLSET

TELL A STORY

Use industry standard editors to write Features, Shorts, Promos, Videos, Commercials, Webisodes, and more.

THE BIG PICTURE

Create Storyboards to communicate the creative vision. Block shots to mark camera, lighting and cast positions for the shoot.

PREPARE TO SAVE

Breakdown the script to make sure all talent, props, wardrobe, equipment, locations, and crew are ready and waiting for the shoot.

READY. AIM. SHOOT.

Create a list of every shot for production. Plan the shot type, angle, movement, equipment, and cast required.

HASTE, NOT WASTE

Schedule shoot dates and locations to keep costs in check. Send talent their sides so they show up ready to shoot their scenes.

STAY ON BUDGET

Thoroughly budget all production costs and generate reports and infographics to keep track of budgeted costs.”

Story Visualization tools

<http://www.ifarchive.org/indexes/if-archiveXmapping-tools.html>

List of IF archive\mapping tools on IF fiction. Many qualify for this category, not all are listed here.

StoryView 2.0 by Write Brothers

<https://www.amazon.com/Write-Brothers-StoryView-2-0/dp/B00007K3A7>

“Create the elements of your story and arrange them into a timeline
Get a look at the bigger picture through panning features or zoom in on the tiniest details
Create virtual index cards that have limitless space for your text
Get close-up looks at where characters and events appear in the story
Use the Outline Window for rearranging your story ideas”

ShortHand

<https://shorthand.com/>

“The world's most successful storytelling teams use Shorthand
They create simply beautiful stories using our beautifully simple story editor — you can, too”

From colorlib article: “Shorthand lets you create stunningly visual short stories that can be complimented with the latest data from social media platforms, from the web itself, or from your direct experiences. Each story has got its own landing page, and Shorthand is a known platform to be used amongst some of the leading journalism sites worldwide.

StoryboardThat

<http://www.storyboardthat.com/>

Bring your book to life\make your own movie



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Lists used to compile this article

CONJURE List

This exact list quoted and re-quoted in a bunch of papers, most or all from the ICIDS community, whenever a listing of authoring tools is called-for, since circa 2011. Not sure if the origin is David Thue or Harmut's ASAPs paper.

Storyspace [1], Agent Stories - **dead** [2], Art-E-Fact - **dead** [3], the authoring part of the IS engine [4] - **dead**, DraMachina [5] - **dead**, Adventure Author [6] - **dead**, Scenejo [7] - **dead**, Bowman/Zócalo [8] - **dead**, Scribe - **dead** [9], Inscape [10], FearNot! authoring tool [11], Rencontre [12] - **dead**, and Wide Ruled [13].

Deglaucy's List

Deglaucy Jorge Teixeira is a Brazilian Doctoral researcher working with HKU's Interactive narrative design professorship. Teixeira studies interactive narrative design for interactive children's books, with a focus on tools and developing prototypes. He compiled a list of 39 authoring tools divided into four categories.

Visual Novel

<https://www.renpy.org>

<http://tyranobuilder.com>

<http://www.visualnovelty.com/index.html>

<http://fungusgames.com>

<https://coronalabs.com/corona-sdk/> (for apps, book apps e visual novel)

<https://www.assetstore.unity3d.com/en/#!/content/54342>

<https://github.com/bladeencoder/bladeencoder-adventure-engine> (for apps, book apps e visual novel)

Interactive Narrative (nonlinear fiction)

<http://advancedstories.net> (ASAPS)

<http://twinery.org>

<http://textadventures.co.uk/quest>

<http://www.inklestudios.com/inklewriter/>

<http://korsakow.com>

<http://inform7.com/download/>

<http://www.adrift.com>

<https://www.celtx.com/gem/index.html> (GEM)

Story development tool (scripts of audiovisual and textual narratives)

<http://www.plotbot.com>

<https://www.finaldraft.com>

<https://storywriter.amazon.com/dashboard>

<https://writerduet.com>

Scrivener

Story Touch

Trelby

<http://storyist.com>

<https://www.scriptbuddy.com>

<http://www.screenplay.com/catalog/product/view/id/30/category/8>

<https://quoteunquoteapps.com/highland/#screen-preview>

<https://www.fadeinpro.com>

<https://www.celtx.com/pricing.html>

Others tools

<https://colorlib.com/wp/storytelling-tools/> (non-fictional...)

<http://www.klynt.net> (não ficcional...)

<https://www.mapbox.com/atlas/#api-section> (for maps/gps)

<https://www.tiki-toki.com> (for timelines)

<http://tilda.cc>

<https://readymag.com>

<https://stampsy.com/about>

<https://atavist.com>

Storehouse Storytelling App

<http://cowbird.com>

<http://aesopstoryengine.com>

Further lists:

- Short listings of similar tools provided in various papers presenting a specific academically developed tool (such as IDTension, Hypedyn, and many others), as well as in general writing on the IDN authoring process in multiple papers included in the proceedings of the ICIDS conference throughout its existence (such as Spierling & Szilas 2009, “Authoring Issues Beyond Tools”).
- List shared on Euphoria discussion, google excel sheet with 69 IF engines. “Another Interactive Fiction Engine List”, maintained by matt -at- anotherdayanothergera -dot- me.
https://docs.google.com/spreadsheets/d/1-B1yKlateTpwTdRNT9W_ZjDzC6XnFpHXrcZ4nr_x7LQ/edit#gid=0
- Vagnatcursor’s “list of tools for narrative games”:
<https://vagrantcursor.wordpress.com/2018/01/02/tools-to-make-narrative-games/>
- Table of IF tools\platforms from the StoryNexus wiki
<http://wiki.failbettergames.com/story-platforms>
- List of 20 interactive storytelling systems (all academic projects, most are procedural story generation prototypes) by the IRIS project (on the Tecfa labs webpage) + page detailing out each one.
http://tecfalabs.unige.ch/mediawiki-narrative/index.php/IS_Systems
- List of game-making tools on itch.io
<https://itch.io/tools>

- Interactive journalism tools list at HackaStory
<https://digitalstory.tools/>
- WebsiteToolTester's list and analysis of "the best game engines for beginners":
<https://www.websitetooltester.com/en/blog/best-game-engine/>
 - Overview of interactive drama systems in "A Critical Review of Interactive Drama Systems" (Arinbjarnar, Barber & Kudenku, 2009). Contains mostly procedural generation story generation systems, which we included as one of our sublists.
 - Similar overview of drama managers, rather than systems: "A Survey and Qualitative Analysis of Recent Advances in Drama Management" (Roberts & Isbell 2008)
- Colorlib list of "Top 10 Storytelling Tools for Content Creators To Boost Productivity"
<https://colorlib.com/wp/storytelling-tools/>
- Many posts and discussions on Emily Short IF blog (see examples on 'additional links' below)
<https://emshort.blog/>
- Interface screenshots Pinterest page by Emily Short
<https://nl.pinterest.com/emshortif/if-interfaces/>
- Collection of "tools for digital storytelling" on Pinterest
<https://www.pinterest.com/niekdb/tools-for-digital-storytelling/>
- Article on Paul Nelson's blog, TheStoryElement, Comparing Undum, Twine, Inklewriter, Infrom, Varytale and some other IF tools.
<https://thestoryelement.wordpress.com/tag/undum/>
- I-docs Interactive documentary tools list from 2014
<http://i-docs.org/2014/07/15/interactive-documentary-tools/>
- PBS list of interactive video tools
<http://www.pbs.org/pov/filmmakers/resources/interactive-video-making-tools.php>
- Submarine Channel's "top 5 storytelling apps": Storehouse, Racontr, Interlude Treehouse, Exposure, Explory
<https://www.submarinechannel.com/top5/top-5-storytelling-tools/>
- Github page by YakiraDixon which features "A curated list of interactive fiction frameworks, tools, and resources." Includes short lists of interpreter tools (cross-platform IF reading) and 'Mapping tools')

<https://github.com/yakiradixon/awesome-interactive-fiction>

- Resource list on the Spring IF competition page
<http://springthing.net/2018/>
- 'Other development systems' forum in infiction.org
<https://www.intfiction.org/forum/viewforum.php?f=16&sid=733c63097b8c3f51989d34e48f074c82>
- Cloak-of-Darkness: a list with some further old-school parser tools (circa 2011)
<http://www.firthworks.com/roger/cloak/>
- List of IF archive\mapping tools on IF fiction.
<http://www.ifarchive.org/indexes/if-archiveXmapping-tools.html>

- Wikipedia list of game engines
https://en.wikipedia.org/wiki/List_of_game_engines

- Wikipedia list of ebook software + table of properties
https://en.wikipedia.org/wiki/List_of_E-book_software

- Wikipedia entry on interactive art, includes a short list of tools that stand out in their gestural\tangible interface potentialities.
https://en.wikipedia.org/wiki/Interactive_art
- List of game engines on Moddb.com, sorted by all-time popularity. Includes a staggering 680 game engines in total.
<http://www.moddb.com/engines?sort=visittotal-desc>
- List of 491 'game creation tools' on gameclassification.com (referred by Stefan Werning)
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 - Top rated game engines on Itch.io
<https://itch.io/tools/top-rated/tag-game-engine>
 - List of papers on authoring tools (1999-2012) by the EU IRIS academic project.
http://iris.ofai.at:7777/iris_db/index.php/topics/single/214
 - List of authoring tools in redcap.interactivestories.de (circa 2009)
<http://redcap.interactive-storytelling.de/>

- RIDERS project 'systems & tools' list
<http://www.riders-project.net/research/systems-tools/>
- AR and VR authoring tools overview by O'reilly.com
<https://www.oreilly.com/ideas/how-to-pick-the-right-authoring-tools-for-vr-and-ar>
- Article on story generation systems and their history in the Living Handbook of Narratology
<http://www.lhn.uni-hamburg.de/article/story-generator-algorithms>
- **List of E-learning authoring tools**
<https://www.efrontlearning.com/blog/2010/10/open-source-authoring-tools-for-e.html>
- <https://docubase.mit.edu/tools/>
MIT list of documentary-related tools
- **IF authoring systems list on IFWIKI.** Includes 104 authoring tools/systems (but many of them dead, dated and/or relatively inconsequential) and the list has not been updated since 2007. http://www.ifwiki.org/index.php/Category:Authoring_system
- **Personal correspondence** with prof. Hartmut Koenitz, Noam Knoller, dr. Christian Roth, dr. Alex Mitchell (may also write to Josh Fisher and/or James Ryan)

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The Virtual Storyteller, Mariët Theune, Sander Faas, Anton Nijholt and Dirk Heylen. In ACM SIGGROUP Bulletin, Volume 23, Issue 2, ACM Press, pages 20-21, 2002.

Visual programming interface:

Porteous, Julie, et al. "Visual Programming of Plan Dynamics Using Constraints and Landmarks." ICAPS. 2011.

The Virtual Storyteller

Swartjes, Ivo, and Mariët Theune. "Iterative authoring using story generation feedback: debugging or co-creation?." Joint International Conference on Interactive Digital Storytelling. Springer, Berlin, Heidelberg, 2009.

Additional links

General

Authoring tool in wikipedia: https://en.wikipedia.org/wiki/Authoring_system

Applied-IDN tools

E-learning authoring tools (separate category): <https://blog.elucidat.com/elearning-authoring-tools/>

Teaching with Inform7 - <http://inform7.com/teach/>

IF

- IF archives\publication portals:

http://www.ifwiki.org/index.php/Main_Page

Wiki

<http://storycade.com/whatisstorycade/>

“**StoryCade** seeks to serve a variety of purposes, all related to the realm of interactive fiction. It will be a place where beginners can find great examples of the medium.

developers can find resources for interactive fiction creation. writers can critique, commentate and discuss the medium.

StoryCade will use an expansive definition of the phrase “interactive fiction.” Included under this umbrella will be traditional text adventures, Twine games, visual novels and some point and click adventures. StoryCade seeks to promote the medium as a whole, and to support its growth.”

<http://storycade.com/resources/> - resource list, includes tutorials and how-to's.

<http://tvtropes.org/pmwiki/pmwiki.php/Main/InteractiveFiction>

Interactive Fiction on TVTropes

<http://rinkworks.com/adventure/>

Adventure games live – collection of adventure games.

<https://ifcomp.org/>

The interactive fiction competition

<https://ifcomp.org/about/if>

The about section, divides IF into Parser, CYOA, and Hypertext.

<http://introcomp.org/>

A smaller and newer IF yearly competition\publication platform, more geared to introduction of ideas and newcomers.

<http://brasslantern.org/>

Brasslantern – general IF website

<http://storycade.com/whatisstorycade/>

StoryCade – IF website

<http://pr-if.org/doc/play-if-card/>

People’s Republic of Interactive Fiction: web platform and Boston IF community hub

<http://www.hyperdreams.com/>

Interactive\computer-generated erotic stories

https://www.meetup.com/Oxford-and-London-Interactive-Fiction-Group/?_cookie-check=zYKWHu-Qus2ucDeP

Meetup page for Oxford and London IF group – some sessions are dedicated to tools

<https://euphoria.io/room/if/>

Euphoria (‘cozy real-time discussion platform’) IF new active chatroom

<http://blog.zarfhome.com/>

Zarf’s blog

<https://www.filfre.net/>

History of computer entertainment by Jimmy Maher, has some very thorough historical inquiries into IF.

<http://jeremydouglass.com/dissertation.html>

PHD on IF aesthetics by Jeremy Douglas, 2007

<https://www.amazon.com/Journal-29-Interactive-Book-Game/dp/1635871727>

Journal 29 is a unique book game where you can solve riddles and puzzles and submit your answers online to get the keys and move forward.
To solve the riddles, you need to think out of the box.

You can write, draw, search, fold pages, combine different methods and try to get those riddles right.
Journal 29 is a 148 pages book providing over 63 riddles you can solve.

<http://store.steampowered.com/app/726870/Anchorhead/>

Anchorhead – highly acclaimed IF project made in Unity and INK, 2016.

<http://springthing.net/2018/>

Competition for IF, parser-focused but not exclusively.

Tool discussions by Emily Short:

<https://emshort.blog/2018/01/09/mailbag-code-and-writing/#more-37855>

IF infrastructure from scratch (quoted above regarding Scrivener), Jan 2018

<https://emshort.blog/2017/02/21/if-tool-development-in-general/>

General overview of what a tool needs for prospective tool developers, Feb 2017

“I’d recommend at a minimum looking at ink, ChoiceScript, Texture, and Twine as comparison points. These engines have been used for a significant amount of creative work and in most cases to drive commercial products on multiple platforms. They also have significant user communities. This is not to say it’s impossible to do better, especially in some specific niche area, but it’s worth being aware and not duplicate effort.”

<https://emshort.blog/2014/03/29/what-people-said-about-the-missing-tools-and-some-that-arent-missing-at-all/>

On missing elements of tools, March 2014

<https://www.dropbox.com/s/tc0n3rkp7yhyd7/Northeastern.pptx?dl=0>

Slideshow presentation on tools

<https://www.intfiction.org/forum/>

Very active all-purpose IF community forum.

<https://planet-if.com/>

Planet IF – important IF portal, integrating posts by the likes of Zarf and Emily Short.

<http://brasslantern.org/community/discussion/ifmud.html>

IF MUD – an MUD platform for IF community discussion, which started in 1997.

<https://emshort.blog/2016/04/12/beyond-branching-quality-based-and-salience-based-narrative-structures/>

On non-branching-tree narrative structures. Very interesting take at structural typology.

“There are MANY hypertext and CYOA engines; there are **fewer salience/QBN engines.**”

“Quality-based narrative is the term invented by Failbetter Games to refer to interactive narratives structured around storylets unlocked by qualities.*

A storylet is typically a paragraph or two of text followed by a choice for the user (each option is referred to as a branch in Failbetter parlance) and text describing the outcome of that choice. Qualities are numerical variables that can go up or down during play, and represent absolutely everything from inventory (how many bottles of laudanum are you carrying?) to skills (what is your Dangerous skill level?) to story progress (how far have you gotten in your relationship to your Aunt?). The StoryNexus tool implements QBN; so did Varytale, while that was still around, though in a hybrid form that allowed storylets themselves to contain CYOA-styled segments.

[...]

Salience-based narrative is a term I just made up to refer to interactive narratives that pick a bit of content out of a large pool depending on which content element is judged to be most applicable at the moment. Like QBN, this approach is agnostic about what kind of information matters: just as a quality in Fallen London could be pretty much anything, salience narrative can be tied to pretty much any testable information in the world state.

Where QBN lets the player choose the best element to see next out of all the elements that are currently legal, the salience-based approach makes that decision itself.

An excellent example of this is Elan Ruskin’s dialogue system for Left4Dead, and more recently it was picked up by Firewatch. Both of these games allow the player to traverse a 3D world and encounter different situations, and they need to be able to feed in dialogue chosen to match those situations tightly.

An advantage of salience-based systems is that it’s relatively easy to build a rudimentary set of content with sensible, broad defaults, and then gradually add new, more salient content for individual situations. **You’re never committed to having uniform coverage for every possible situation. It’s also relatively easy for authors to think about: you play the game, you see a situation that deserves some special acknowledgement, you build a rule describing that situation and drop it in place, and you’re done; typically, if this is well-implemented, you don’t have to worry about that many secondary effects of such a choice.**

[...]

Waypoint narrative. Again, I’m making this term up, but it corresponds to the method I used for Glass. In Glass, the interaction is all about conversation. Both the players and the NPCs are

able to change the current conversation topic. Finally, there are trigger topics that advance the story to a new state whenever we reach them.

Particular lines of dialogue are associated not with the topics themselves but with transitions between one topic and another — so an NPC might have a way of changing the subject from Royalty to God, for instance — and it's possible to pathfind between topics depending on where viable transitions exist.

What that means is that the system can dynamically pathfind its way towards the next trigger topic.

[...]

A corollary of all this: **Twine is a fabulous tool both for finished work and for prototyping, but it is not really designed for some of these structures. In particular, we should totally be teaching students about Twine and how to use it, but we shouldn't teach them that that's the only way to prototype an interactive story, or the way to prototype all forms of interactive story. Otherwise, they're likely to get stuck on combinatorial explosions that could be solved using another system with more robust state tracking.**

*

Naturally there are a lot of other options besides these, including but not limited to the familiar **map-based format** (80 Days; or the puzzle-gated variant used by many parser IF games); **database-research games** such as Her Story or Analogue: A Hate Story; **holographic games** that expand, alter, or overwrite text in place to delve deeper into different aspects of a story, sometimes while keeping the entire narrative arc in view from the beginning (see my recent post on Sisters of Claro Largo, or PRY); and **card-deck based narrative games** which leave the ordering to the player. (I have a couple of card narratives on hand to review, and I'll be coming back to them in a future post.)

*

Elsewhere: Mark Rickerby has recently posted about his experiences with graphing narrative elements for an espionage game. And on the puzzle-gating point, here's a neat article about puzzle visualization.

<http://gdcvault.com/play/1023095/The-Shapes-in-Your-Story>

<https://maetl.net/notes/storyboard/narrative-graph-models>

https://www.gamasutra.com/blogs/RuneSkovboJohansen/20160406/269732/Working_with_puzzle_design_through_state_space_visualization.php

<https://emshort.blog/2012/09/15/the-holographic-story/>

<https://emshort.blog/2018/02/03/next-generation-design-tools-for-narrative-content/>

Next generation design tools for narrative content, also by short.

<https://emshort.blog/2016/04/02/brief-bibliography-about-if-history/>

Bibliography and brief overview of IF history, also by Short

Pinterest boards:

<https://nl.pinterest.com/emshortif/if-interfaces/>

Interface screenshots by Emily Short

<https://www.pinterest.com/niekdb/tools-for-digital-storytelling/>

Collection of “tools for digital storytelling” on Pinterest

<https://www.pinterest.com.au/pin/62135669833128472/>

Another pinterest collection titled “storytelling”, that I found searching for Racontr. Many pins seem to relate to IDN authoring tools.

<https://www.trivantis.com/authoring-tool>

Definition of “authoring tool” in trivantis – an elearning company. Good for explaining why learning tools\tools for education\class-creation are not included here.

“In reality, ‘e-Learning course creation tool’ is a better term for this category of software rather than the more popular ‘authoring tool.’ As you begin your search for an authoring tool, you’ll quickly come to find that this term embraces a wide range of development functions. You may also discover, as others have, that a combination of tools—that perform complementary functions—rather than a single tool may best fit your needs.”

<http://www.growthengineering.co.uk/genie-content-authoring-tool/> - example of E-learning authoring tool

Procedural narrative generation

<http://pcgbook.com/>

A free book on procedural content generation in games.

<http://www.proccjam.com/event-format-accessibility/>

Proccjam is a game-jam-like event series for procedural generation tools, plus a publication platform.

“PROCCJAM is an annual event about "making things that make things". We make games, art, toys, tools and other things with generative code.”

<https://www.polygon.com/2013/9/13/4723206/the-future-of-game-narratives-will-be-designed-with-scorcese>

Heavy Rain’s David Cage predicts a future of procedural narrative design for games

Narrative Games

Audio games portal - <http://audiogames.net/>

<https://mastodon.gamedev.place/about>

Game dev conversation portal on Mastodon social network

Video-based IDN

<https://ammaci.wordpress.com/essays/korsakow-and-klynt-a-brief-analysis/>

Analysis of interactive docus, Korsakow vs Klynt by Anna Mac

<http://storycade.com/humble-weekly-bundle-features-fmv-titles/>

Humble-Bundle release FMV (Full Motion Video)-centred package. **“Probably best known in the form of crime thriller game Her Story, the FMV is a video assisted genre that uses actual video of live actors to tell the story.”**

List of games: Missing, 7th guest, 11th hour, Tex Murphy, Tesla Effect: a Tex Murphy Adventure, Roundabout, Her Story

FMV on Wikipedia: https://en.wikipedia.org/wiki/Full_motion_video

https://en.wikipedia.org/wiki/List_of_interactive_movies

List of interactive movies by year of release

https://en.wikipedia.org/wiki/Web_documentary

Web documentary/interactive documentary wiki

<http://www.doctordekker.com/>

THE INFECTIOUS MADNESS OF DOCTOR DEKKER: a lovecraftian murder mystery FMV game

Other

<https://itch.io/search?q=Kinetic+novel>

Kinetic Novels on Itch

<https://thenounproject.com/>

Publicly available icons project

<http://www.lafactoriainteractiva.com/planet-factory>

Maker PF – ‘authoring tool’ exemplifying why I don’t count E-learning or business-related tools, no narrative there

Further leads to follow-up on

- Michael Nietzsche TUI project
- **Submarine channel** interactive project with Peter Greenway – The Tulse Luper Journey
<https://www.submarinechannel.com/game/the-tulse-luper-journey-by-peter-greenaway/>
<http://tulseluperjourney.submarinechannel.com/>
https://en.wikipedia.org/wiki/The_Tulse_Luper_Suitcases
The digital game part of the project was developed on Flash, I’m not sure what Hartmut meant to find here but if there’s a unique tool for this it seems to have remained in-house.
- **Ask Josh Fisher + James Ryan** on any interesting AR\VR\MR tools (one’s being developed by Mateas alongside Ryan?). Also dialogue with **Alex Mitchell** and possibly **Josh Tennebaum**.
- Categories to potentially delve deeper into:
 - **AR\VR\MR specific tools** (Josh Fisher)
 - **Early Historical tools** (James Ryan, can also ask him about procedural world generation tool – not really an authoring that – that he’s currently developing alongside Mateas)
 - **Expanded IF tools lists** – most of the tools that I checked there that aren’t currently on this list are irrelevant, but go over and give the tools a short look again one by one.
 - **Go over all fringe tools to see if some (like Novelty) don’t deserve inclusion in the list, move these tools to a different sublist of dead tools.**

WYSIWYG (what you see is what you get) and/or **model-based design tools**

<https://www.theatlantic.com/technology/archive/2017/09/saving-the-world-from-code/540393/>

WYSIWYG is basically an ontological UI category of tools equipped with real-time visualization, so that you work inside the storyworld you create and can test it in real time. Some of the tools have limited or extended capacity in this sense. This is mostly a sub-category of real-time graphics

“Bantégny’s company is one of the pioneers in the industrial use of model-based design, in which **you no longer write code directly. Instead, you create a kind of flowchart that describes the rules your program should follow (the “model”), and the computer generates code for you based on those rules.**”

This is of central interest to us, and relates to both mixed-initiative and story generation tools.

WYIWYG interfaces are featured in many IF tools (graphically much easier), and now making its way onto engines, with CryEngine3 for example boasting the perfection of this feature.

Model-based design is to some extent a part of any tool – they’re meant to replace code – and the more templated and specified, the more it relates to the concept. But the sort of modelling environment where the author just sets the layout of game mechanics and rules and the system produces an appropriate game does not yet exist at anywhere near the level this article imagines, to the best of my knowledge. Interesting to wonder which tools get closest, though.