

# Machinima: Virtual World Filmmaking

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# Machinima: Virtual World Filmmaking

**Machinima: Virtual World Filmmaking** is a form of cinematic expression that documents life within virtual spaces, and draws connections between virtuality and reality. Machinima is virtual filmmaking, and the relevance of recent machinima to some is that it conveys underlying emotions and motivation for participants of virtual worlds like Second Life to express daily life, love, and art through the metaverse. Other machinima have originated from games and virtual worlds that are not designed to allow for content creation, and subsequently the producer is limited to whatever characters and sets exist within the 2D or 3D environment. Virtual filmmaking is minimally the process of capturing and constructing images within virtual environments to tell a story through iconic representation in various forms and genres. A good storyline taps into the human soul, and machinima is not different in that respect.

Machinima was birthed from the desire to film game runs of action games, in an effort to capture the strategic skills of players. As a genre, it has evolved into action thrillers and mysteries. Machinima allows the maker to capture live music events and scenes, and to document its representation inside virtual worlds. Machinima covers live events (music, sports, role play, news events) and often communicates art and information to real world audiences through news machinima and documentaries. Educators and archivists have begun to experiment with machinima in affordable ways, by recreating history and engaging audiences through reenactments and role play. Advertising agencies and corporate sectors are increasingly relying on machinima for image building and selling ideas and products. Corporate image is constructed via machinima and there is a significant societal influence on real and virtual audiences. Non-human avatars of virtual communities, such as furries, tinies, and other groups are portrayed in machinima, such as in the series *Tiny Nation* filmed in Second Life. The movie Avatar has served as a metaphor for many social issues, including those of race and ethnicity, that are embedded within machinima.

Machinima genres include: Drama/Action, Romance, Love, Documentary/News and Commercial.

# Machinima Artist Guild

The Machinima Artist Guild is among several SL machinima organizations; however, it serves as the premiere network organization for machinima makers inside Second Life. It has a library of more than 800 machinima videos. The Second Life Machinima Artist Guild was created in August 2008, as a place where Second Life Machinima producers, actors, directors and technicians might collaborate and share experiences. It is affiliated with the Professional Machinima Artist Guild, which has extended its influence beyond Second Life to other machinima platforms such as Moviestorm.

**Second Life Machinima Artist Guild** is comprised of mainly virtual world filmmakers using Second Life as their primary setting. However, the guild welcomes other platforms. As with any filmmaker, it is common for guild members to organize a crew, and to delegate responsibilities for sound, set design, costumes, shooting, producing, and editing. A significant site for those interested in learning more about machinima and its producers is The Ning website, [\[1\]](#) Among the guild's membership is a cast of many actors, producers and creative types involved in capturing life in virtual worlds through machinima. The guild is comprised of more than 100 members. Many of their works can be seen on YouTube, and some are featured on Second Life's home site, serving as an example of daily virtual life and artistic possibilities in-world. The guild offers a quick rundown on a mix of photographers and filmmakers producing and performing in the art of machinima. Lowe Runo organized the Second Life Machinima Artists Guild in August 2008.

Its organizational mission is to provide a network among Second Life machinima producers, actors, directors and technicians so that they might collaborate and share experiences. This collection of machinima artists represents only one group in Second Life, but it is the most visible in terms of showcasing the majority of filmmakers associated with SL. Many of these artists collaborate and showcase their works online, at RL festivals, and within the game world. The guild's Web site offers a glimpse into their work, and provides opportunities for critique among members. The guild as founded by Runo was established to serve as a forum for in-world producers to exhibit and critique work. The majority of the machinima members see themselves as artists, but some create corporate videos for additional income. In 2010, he founded the Professional Machinima Artist Guild. [\[2\]](#) The Second Life Machinima Artist Guild Annual Awards exemplify the best in Drama, Love, Art Fun and Newbie.

## Understanding Machinima

In 2007, the first European machinima festival, Machinima Festival Europe, began to provide a hint toward the future of machinima. Based on award entries and nominations, two software engines rose to the top, and consequently began to reformulate and redefine the state of machinima, especially as a vehicle toward storytelling. Moviestorm made a significant appearance, as well as several machinima that had been produced through the game engine of Second Life. The conference site defines machinima as filmmaking "within a real-time, 3D virtual environment, often using 3D video-game technologies...Machinima uses video games and 3D animation for making short films" (MFE, 2007).

That definition can be traced back to Paul Marino (2009), author of *3D Game-Based Filmmaking: The Art of Machinima*. He was an experienced animator prior to his move toward machinima. In 2002, Marino established the Academy of Machinima Arts & Sciences (AMAS), [\[3\]](#) a non-profit organization, as well as co-founded the machinima production company ILL Clan, in which he produces works under the pseudonym of ILL Robinson. Part of his credits include director for the project *Hardly Workin* that won a Best in SHO award in 2001 and in 2002 an award for best acting in AMAS's Machinima Film Festival. Among his credits, Marino created a machinima video for MTV2 on the action game *Half Life 2*, and worked on a *Sims 2* machinima series. The premise of machinima is

derivative of "the player-producer culture, where the player uses his or her own storylines and humor to create new pieces, rather than professionally produce films. So cult has Machinima become, that it is now spawning a new era of computer games – and a new approach to computer gaming" (MFE, 2007). The producer can rely on characters and sets within a game, or totally start from scratch by creating their own actors and environments for the film. The end result is "a virtual film" (MFE, 2007). It is described as a "hybrid" (MFE, 2007) process that originated by capturing game play and has evolved as a competitive means of producing sophisticated animated motion pictures. Machinima is no longer necessarily filmed within a game engine. A whole movie can be constructed within a software engine.

**Machinima vs. Animation** distinctions are becoming increasingly blurred. Machinima is similar to animation, but scripting is led by events such as capturing scenes when video recording or filming. Animation producers generate continuity and motion among discreet illustrations by linking keynote to keynote (rendered image to rendered image). Each keynote is linked together to create a sequence of motion. Machinima, in contrast, is a faster process than traditional animation and it can be recorded in real-time within a virtual environment, much like how filmmaking or video recording captures scenes. In essence, most machinima are created within 3D environments, whether they are within a game engine or a computer program. The AMAS (2010) contends, that machinima can be understood as the "real-time recording of human/scripted performance and events...[that] eliminated the rendering process of animation." Like animation, however it "allows total control over visual representation" of sets, characters and events (AMAS, 2010). It also provides a live or scripted setting for characters (or virtual world actors or avatars) to interact with each other. Post production further shapes the final look of the machinima, and the "hardware driven playback is resolution independent" (AMAS, 2010).

**Defining Machinima** is relatively subjective among its filmmakers and reviewers. Problematic to its definition is the desire to label everything and anything recorded inside a virtual world as "machinima." A game show, for example, in the classic sense of machinima's definition is not machnima. But a news report about a game show conducted inside Second Life would fulfill the "storytelling" component of machinima that many filmmakers hold dear to its definition. On the other hand, if one expands machinima to the chronicling of human drama inside virtual worlds, one might consider that same game show as an example of virtual life captured on film for archival purposes, similar to the role of a documentary and a slice of life as represented through avatars and controlled by their puppeteers.

In December 2009, Michael Nitsche, founder and director of Digital World and Image Group (DWIG)[\[4\]](#) and Associate Director of the Experimental Game Lab at Georgia Tech, attempted to define machinima, keeping in mind its historical evolution. He pointed out, "A caveat upfront, nobody who's too busy doing it should be bothered. This might be one of those self-perpetuating problems academics like. It just so happens that I am such a creature..." He challenged the "utilitarian" definitions offered both by Marino, as well as Hancock & Ingram - a "technique of taking a viewpoint on a virtual world, and recording that, editing it, and showing it to other people as a film" (Nitsche, 2009). He partakes in the name game, and begins by acknowledging the difficulty of defining machinima "based on a technique, which is one reason the term 'anymation' has been used as in parallel to machinima by artists such as Tom Jantol. Likewise, the connection to gaming is shrinking." He adds, "Tying it to a game in general has become equally problematic as special machinima creation packages like Moviestorm and iClone launched without any basis in gaming" (Nitsche, 2009).

Moreover, he indicates, that merely "replacing 'game' with 3D world does not solve the problem as the definition of a 3D virtual world is equally unclear – is a Maya scene a 3D world? Why does it have to be 3D? And where is 'film' in the equation?" Critical concepts to any definition of machinima are "procedurality" and "performance," he argues; "... maintaining a kind of performative control is key for the preservation of machinima's identity." He explains, "At its core, machinima is part of the same digital procedural media family as video games but it differs from games in the way that this control is weighted." Logically, he concludes, "Machinima is more flexible than games because it tries to do something different. Machinima can switch between modes of what is producing and controlling easier than games

can" (Nitsche, 2009). Overall, he perceives machinima as having a "much stronger focus on the cinematic presentation, the 'telling' looks at a different use of procedurality. Where games play with the changes of the action, machinima plays with the changes in the cinematic narration" (Nitsche, 2009). In fact, he states, "Performance of the game, the player, and even the audience can include rules that go beyond the creation of the image itself and instead can affect the action that is displayed" (2009).

**A Historical Overview** must acknowledge the technological innovations within the gaming industry as well as the growth of social media platforms. The backdrop to machinima is its discovery among game hackers who began to tap into the less sophisticated game engines of the time to record game action. In a sense, it became similar to making home movies or chronicling game plays. In the 1990s, players began to use the graphic engines from shooter games, like Quake,<sup>[5]</sup> to capture speed runs, namely when a player advances through a level. Players would swap videos of speed runs, and the practice became common about game enthusiasts. Soon, Quake movies were created complete with fictitious storylines set within the game (Fall, 2009). The producers were typically avid game players. In October 1996, a Quake film *Diary of a Camper*,<sup>[6]</sup> a 100 second demo file, was distributed among the gaming community. The short run actually had a storyline beyond the typical game footage. Other filmmakers began to take an interest in machinima, and increasingly so when it inspired television programming and commercial advertising. Through the 1990s, a number of advances in game technologies involving improvements in camera adjustments and character customization began to allow for improved media making. Companies began to crack down on movie making practices that relied on the game's internal engine. In 2000, Hugh Hancock created a machinima community to expand the art of in-game filming beyond Quake to other platforms. The genre would no longer rely on any specific game engine, and video files were the means for distribution and exhibition. His Website, [machinima.com](http://machinima.com),<sup>[7]</sup> became the information hub for those wanting tips on film making techniques or reviews on technologies. Hancock founded the Strange Company,<sup>[8]</sup> and is credited with creating the term machinima. One year later, Showtime featured a machinima film, *Hardly Workin'*,<sup>[9]</sup> that won best experimental and best in SHO awards in the 2001 Alternative Media Festival. Steven Spielberg used machinima to experiment with special techniques for his motion picture *Artificial Intelligence: A. I. Machinima* themes sway toward science fiction, historical periods, and to a lesser extent social and political issues.

Machinima has found its way on the mainstream and satellite networks, including the BBC, MTV, and HBO, the first network to air a full-length machinima film from a virtual world. The documentary *Molotov Alva and His Search for the Creator: A Second Life Odyssey* was shot and produced in Second Life. The premise of the documentary follows "a man named Molotov Alva <sup>[10]</sup> [who] disappeared from his California home in [January 2007], just as a series of video dispatches by a traveler with the same name began to appear inside Second Life" (Molotov, 2009).

The first full length machinima series based on the motion picture *Terminator Salvation* <sup>[11]</sup> was released May 2009 through iTunes, Xbox Live, Sony Playstation, and Amazon.com. It was produced by the film's director and Machinima Inc., distributed by Warner Brothers and developed and produced through Halcyon Games. It is a 6 part series that relies on the engine of the game Terminator Salvation. Its plot begins two and a half years before the motion picture's storyline (Terminator, 2009). "Machinima is the next generation of storytelling," posits Diane Nelson, president of Warner Premiere (Terminator, 2009). Cos Lazouras, president of Halcyon Games, explained to *Business Wire* (Terminator, 2009), "Re-purposing our game to produce the very first dramatic series in this medium is a fantastic innovation and will become the norm for game makers in the future."

# Creating Machinima in Virtual Worlds

Machinima is a format that exists somewhere between film and video and the industries of animation, film and television. Its uniqueness is established in its accessibility to novice and professional filmmakers in an industry overwrought with high production costs. Virtual filmmaking is an evolving process that is blurring the lines between formats and industries. It is digital media constructed in virtual environments that increasingly allow for individuals to interact with one another through role-play and simulation. As software and hardware move toward immersive experiences within virtual environments, the puppeteers become one with the avatar. The process of casting actors as characters becomes a physical exercise in advanced graphic techniques, whereas the conduit to the avatar remains that supplied by human emotion and propelled through virtual reality.

There are several components in creating machinima: storytelling, avatar animations, virtual environments, and sound. But first it is necessary have an understanding of the tools involved:

**Machinima Tools** are varied among PC and Macintosh users. Certain technologies are employed by machinima makers to achieve certain aesthetics. Many digital technologies have liberated the practice of filmmaking to amateurs. The soft and hard gear necessary for the beginning to intermediate professional are varied and all have advantages and disadvantages. The idea, however, is to look at how these tools are creating a new group of filmmakers, comfortable in existing between animation and digital filmmaking, and real and virtual life. Important considerations are the various programs available to capture "film," along with the appropriate specifications for computers to record and edit machinima like the professionals. The Machinima Artist Guild endorses Torley's Guide to Movie Making. [12]

**Telling the Story** is what most machinima producers strive to accomplish in their works. Every good film – and machinima – needs a storyline. Professional machinima makers can visualize the whole plot in their mind. For beginners, storyboarding can be a useful technique for laying out the plot. In a good story, machinima or otherwise – the plot, the characters, the props, the setting, the dialogue – must work together. Limitations in machinima compared to traditional filmmaking can be overcome when the storyline is well developed and draws in the viewer. Machinima genres include documentary, corporate, art, drama, and educational, and even a commercial should tell a story and trigger human emotion. In Second Life, the stories reflect human emotion that transcend nationalities. At other moments, you can see distinct cultural and gender perspectives. One machinima screened during the MaMachinima International Festival (MMIF) [13] focused on a political upheaval in Nigeria. Historical events were reconstructed through machinima. The storyline is critical, and the secret is to start with what you have and worry more about telling a good story than using a lot of special effects. Photoshop skills are also invaluable.

*Lowe Runo, Platform: Second Life*

Example: *Bedtime*, YouTube: <http://www.youtube.com/user/LoweRuno#p/u/18/eXhv8dVvMNI>

Example: *Action Flix*, YouTube: <http://www.youtube.com/user/LoweRuno#p/u/1/g9OI5E2A00o>

**The Puppeteer: Animating the Body** is a controversial topic among machinima theorists. Behind every avatar is an actor! To make an avatar look, sound, and move realistically requires an understanding of various animation poses and scripts. The idea is to make the avatar "act" as real as possible so that the viewer is compelled by the storyline. Key techniques for professional machinima include skill in the use of pose animations, lip syncing, and some basic scripting techniques. Machinima also requires an understanding of the role of the actor as a puppeteer, as an expression of its creator, and an awareness of the virtual actor as representative of human embodiment - an idea

especially relevant to Second Life. Second Life provides its users an unique ability to create content and allows for interactivity among residents in dynamic, evolving communities.

*Hardy Capo, Platform: Moviestorm*

Example: *Cafe Insominac*, <http://vimeo.com/4735924>

Example, *Sandstorm*, <http://vimeo.com/10346196>

**Virtual Environments** exist within platforms like Second Life, where land owners can create content, which includes the construction of movie sets for machinima. The concept of “natural” and “urban” in machinima is relevant in virtual environments; either it is constructed intentionally or is found as an existing set for a region of Second Life, for instance. These environments may be iconic of real environments or constructs of fantasy. Often machinima makers do much of the design, shooting and editing themselves using what is available within Second Life. The landscapes and related builds in Second Life are natural sets, and seem to be waiting for a story to be told there. As avatars, SL residents typically visit these sites and create stories in their imagination or role play with others. Some of the make-believe appears believable when you stay in-world over a period of time. Machinima artists merely capture these experiences and fantasies on film, and blur the lines between real and imaginary, as any good storyteller might accomplish using any other medium.

*Lainy Voom, Platform: Second Life (mainly)*

Example: *Dagon* (H.P. Lovecraft), <http://www.youtube.com/user/tracechops#p/u/0/CMOHpuxFbm0>

Related article: <http://blog.koinup.com/2009/08/lainy-vroom-and-art-of-machinima.html>

Example: *Push*, YouTube, <http://www.youtube.com/user/tracechops#p/u/1/hLeK9Lanh94>

**Sound in Machinima** is a significant component of filmmaking, working hand in hand with image. Machinima sound can be created and recorded in-world, as well as imported from the real world. Foley and music composition are important elements to machinima. Certain scripting restrictions within Second Life make it difficult to import lengthy and surround soundscapes into a region. However, sound can be added as a post production element. Dialogue can also be added during post production for the best quality sound. Indeed, music machinima is one of best ways to engage newcomers in learning about the craft. Sound can serve as a critical psychological component toward creating theater of the mind moments in machinima. Since 2007, soundscapes within Second Life have become complex and layered thanks to the efforts of artists like Dizzy Banjo [14] and Bryn Oh. [15] Collaboration among producers can occur easily within an international platform like Second Life.

*ColeMarie Soleil, Platform, Seconde Life*

Example: *No Color*, <http://www.youtube.com/user/rockerfaerie#p/a/u/0/L46IZKgI4mc>

Example: *Stay with Me Tonight*, <http://www.youtube.com/user/rockerfaerie#p/u/32/VNIUU9VK794>

**Festivals and Exhibitions** are increasingly showcasing machinima across the globe, and being accepted at established film festivals. Machinima can also be part of installation spaces and art galleries in virtual worlds like Second Life. There are virtual drive-ins and theaters in Second Life, which serve as exhibition spaces.



## SL Machinima Artist Guild at SL 6th Anniversary

Second Life's 6th Anniversary comprised week long activities in 2009 preceding its official launch date, June 28th. The SL Machinima Artists Guild was invited to create an exhibit for the event, and was actually among a number of organizations and residents allowed to showcase its works. The Guild exhibited approximately 20 machinima films on several wall screens. On Saturday, June 27, 2009, a panel with members Rysan Fall and Cisco Vandeverre presenting and guild founder Lowe Runo and project manager Josie Anderton moderating related some key historical moments in the accomplishments of machinima makers and insight into the future of the genre. What is obvious is that the limitations of using game engines to create machinima will be overcome in the near future, and in the meantime producers see those limitations as part of the creativity necessary to produce in the genre. Members of the guild were on hand to answer questions and offer support to those interested in learning about machinima. Guild member Rysan Fall started off the series that afternoon with an overview on the history of machinima. He presented in voice, while guild members and others responded via text in the public chat. At one point, Fall commented that Comedy Central's South Park episode *Make Love, Not Warcraft* [16] was significant because the television show was shot with many of its scenes as machinima. The plot took a satirical look at the multiplayer online role-playing game World of Warcraft.

### Machinima Sites (Viewing)

Blip TV, <http://www.blip.tv/>

Aview TV, <http://www.livestream.com/aviewtv>

Machinima.com, <http://www.machinima.com>

Second Life Machinima Artist Guild, <http://slmachinimaarts.ning.com>

Professional Machinima Artist Guild, <http://promag.ning.com/>

MaMachinima International Festival, <http://mmif.org/>

**Machinima Artist Guild, founder** Lowe Runo Productions, <http://lowerunoproductions.web.officelive.com/default.aspx>

## References

Academy of Machinima Arts & Sciences (AMAS). Accessed March 19, 2010, from <http://www.machinima.org/>

Berkeley, Leo. (2006). Situating machinima in the new mediascape. *Australian Journal of Emerging Technologies and Society*, 4 (2), 65-80.

- Hancock, Hugh & Ingram, Johnnie Ingram. (2007). *Machinima for dummies*. Hoboken, NJ: For Dummies.
- Hanson, Matt. (2004). *The end of celluloid: Film futures in the digital age*. East Sussex: England: RotoVision.
- Hawkins, Brian. (2005). *Real-time cinematography for games*. Charles River Media.
- I Am Legend. Video Game. Warner Brothers. Accessed March 22, 2010, from <http://iamlegendsurvival.warnerbros.com/index.html>
- Johnson, P. (2010). *Second Life, Media, & The Other Society*. New York: Peter Lang (in press, May)
- King, Brad. (2002, July 23). Machinima: Games act like films. *Wired News*. Accessed March 19, 2010, from <http://www.wired.com/gaming/gamingreviews/news/2002/07/53929>
- Lowood, H. (2006). High-performance play: The making of machinima. *Journal of Media Practice* 7 (1), 25–42.
- Lowood, Henry E. (2006). High-performance play: The making of machinima. In Andy Clarke & Grethe Mitchell (eds.), *Videogames and art: Intersections and interactions* (UK: Intellect Books).
- Lowood, Henry E. (2005). Real-time performance: Machinima and game studies (PDF). *The International Digital Media & Arts Association Journal* 2 (1), 10–17. Accessed May 31, 2009, from [http://www.idmaa.org/journal/pdf/iDMAa\\_Journal\\_Vol\\_2\\_No\\_1\\_screen.pdf](http://www.idmaa.org/journal/pdf/iDMAa_Journal_Vol_2_No_1_screen.pdf)
- Lowood, Henry. (2006). Story-Line, dance/music or PVP? Game movies and performance in World of Warcraft. *Games and Culture*, 3 (4), 362-382.
- MFE (2007). Machinima Festival Europe. Whis is machinima? Accessed March 19, 2010, from <http://www.dmu.ac.uk/machinima>
- MMIF. (2010). Web site. Accessed April 19, 2010, from <http://mmif.org/>.
- Machinima.com. Accessed March 19, 2010, from <http://www.machinima.org/machinima-faq.html>
- Machinima. Wikipedia. Accessed June 12, 2009, from [en.wikipedia.org/wiki/Machinima](http://en.wikipedia.org/wiki/Machinima).
- Marino, P. (2004). *3D game-based filmmaking: The art of machinima*. Scottsdale, AZ: Paraglyph.
- Marino, Paul. (2009). *3D game-based filmmaking: The art of machinima*. Scottsdale, AZ: Paraglyph Press.
- Metaverse Television. (2009). Web site. Accessed June 9, 2009, from <http://www.metaverse-tv.com/>
- Miller, P. D. (2001). Material memories: Time and the cinematic image. Notes for the Oberhausen Film Festival 2001. Accessed June 4, 2009, from [djspooky.com/articles/material\\_memories\\_eng.php](http://djspooky.com/articles/material_memories_eng.php)
- Molotov Alva and his search for the creator. (2009). HBO documentary films. Accessed June 9, 2009, from <http://www.hbo.com/docs/programs/molotovalva/index.html/>
- Morris, Dave, Kelland, Matt, & Lloyd. (2005). *Machinima: Making animated movies in 3D Virtual Environments*. Florence, KY: Course Technology PTR.
- Nitsche, Michael. (2005). Film live: And excursion into machinima. In Brunhild Bushoff (ed.), *Developing Interactive Narrative Content* (pp. 210-243). Munich, Germany: High Text.



Nitsche, Michael, & Thomas, Maureen. (2004). Play it again Sam: Film performance, virtual Environments and game engines. In Gavin Carver & Colin Beardon (eds.), *New Visions in Performance: The Impact of Digital Technologies* (pp. 121-139). Lisse, NL: Swets & Zeitlinger.

Second Life Machinima Artists Guild. <http://slmachinimaarts.ning.com>

Second life machinima sweeps Machinia Europe fest. (2007, September). Accessed March 19, 2009, from <http://nwn.blogs.com/nwn/2007/09/second-life-m-1.html>

Terminator Salvation: The machinima series explodes online as the first long form dramatic machinima production (May 19, 2009). *Business Wire*. Accessed June 9, 2009, from <http://www.pr-inside.com/terminator-salvation-the-machinima-series-r1262277.htm/>

Tiny Nation. ILL Clan Production. Accessed March 22, 2019 from <http://illclan.com/tiny-nation/>

Treet TV (2009). Web site. Accessed June 7, 2008, from <http://www.treettv.com/>

Vanmoer, D. (2008, October 13). Fabulous fashion: New show to air on SLCN." SL-Newspaper. Accessed October 20, 2008, from <http://www.sl-newspaper.com/>

Walsh, T. (2007, October 26). 'CSI: NY' meets 'Second Life.' *Clickable Culture*. Accessed June 9, 2009, from <http://www.secretlair.com/index.php?/clickableculture/>

## External links

- 1, <http://slmachinimaarts.ning.com/>
- 2, <http://promag.ning.com/>
- 3, <http://www.machinima.org/>
- 4, <http://dwwg.lcc.gatech.edu/>
- 5, <http://wiki.quakeworld.nu/index.php?title=Quake>
- 6, <http://www.machinima.com/film/view&id=15043>
- 7, <http://www.machinima.com/>
- 8, [http://en.wikipedia.org/wiki/Strange\\_Company](http://en.wikipedia.org/wiki/Strange_Company)
- 9, <http://www.machinima.com/film/view&id=9>
- 10, [http://en.wikipedia.org/wiki/Molotov\\_Alva\\_and\\_His\\_Search\\_for\\_the\\_Creator](http://en.wikipedia.org/wiki/Molotov_Alva_and_His_Search_for_the_Creator)
- 11, <http://www.machinima.com/film/view&id=36586>
- 12, [http://wiki.secondlife.com/wiki/Movie\\_help](http://wiki.secondlife.com/wiki/Movie_help)
- 13, <http://mmif.org/>

14, [http://secondlife.wikia.com/wiki/Dizzy\\_Banjo](http://secondlife.wikia.com/wiki/Dizzy_Banjo)

15, <http://brynoh.blogspot.com/>