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Electronic Media Group

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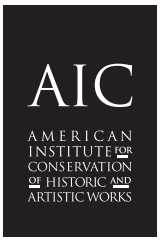

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THE ROLE OF THE TECHNICAL NARRATIVE FOR PRESERVING NEW MEDIA ART

MARK HELLAR

In 2009, the San Francisco Museum of Modern Art (SFMoMA) initiated a project to develop a sustainable, long-term preservation strategy for software-based artworks. Two web-based artworks were examined for this research. The primary goal of the project was to migrate the works onto a virtual server environment. In preparation for the migration, a system was developed to document the operational requirements of the works.

The first work was Julia Scher's (b. 1954) *Predictive Engineering²* (1998, SFMoMA). This web-based artwork accompanies a large media installation and mirrors the formative years of HTML programming in the 1990s (fig. 1).

SFMoMA began to host online artworks soon after launching its website in 1995, with *Predictive Engineering²* as its first commissioned web project. For Scher's 1998 solo exhibition, she updated and reconfigured an earlier, site-specific multimedia installation, *Predictive Engineering* (1993) for the new museum building. She developed an online project to accompany and expand on this second iteration of the work.

The second work, *Agent Ruby* (2002, SFMoMA), was created by San Francisco-based artist Lynn Hershman Leeson (b.1941), a pioneer of media-based and con-

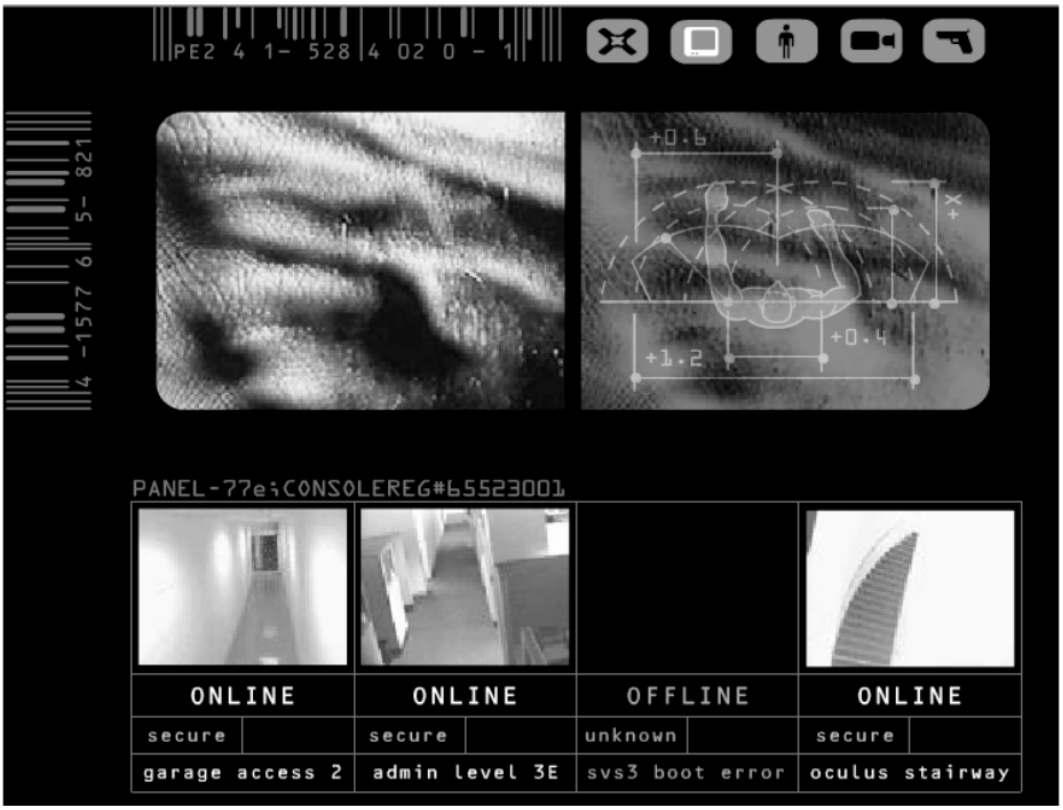

Fig. 1. Screenshot of Julia Scher's *Predictive Engineering²*, 1998, website San Francisco Museum of Modern Art, gift of the artist, acc. no. 2008.231. © Julia Scher. Courtesy SFMoMA. Available at http://www.sfmoma.org/media/exhibitions/espace/scher/map.htm.

ceptual art. *Agent Ruby* is one of many female avatars conceived by Hershman as an expanded cinema experience of her film, *Teknolust* (2002). In *Agent Ruby, a* web-based chat agent has developed her persona by conversing with users online, which has influenced her memory and knowledge. Visitors to the website can engage *Agent Ruby* in a direct online dialogue. Hershman's work features custom artificial intelligence software, embodied by an avatar that can talk back to viewers.

In 2013, Hershman explained the creation of *Agent Ruby* in relation to the film *Teknolust*,

> Around 1996 I had an idea to do an Internet bot that viralized and talked to people. No one understood the concept, so I wrote the film *Teknolust*, which, weird as it was, still was easier to grasp than Agent Ruby. So we got funded for the film and wrote into it this bot that appeared online, which is what gave birth to her (Leeson 2013).

While they were featured on the museum's website in a specifically designed E-space (www.sfmoma.org/exhib_events/exhibitions/espace, accessed 04/25/15) none of these works officially entered the collection. In 2008 the museum acquired the two works as a statement about the intention to take on the job of proper handling, maintenance, and display of web-based artworks.

Each of these works offered a unique set of complexities. *Predictive Engineering²* consisted of a number interlinked web pages, each containing an Adobe (previously Macromedia) Flash multimedia file object containing hundreds of animation layers images and sounds.

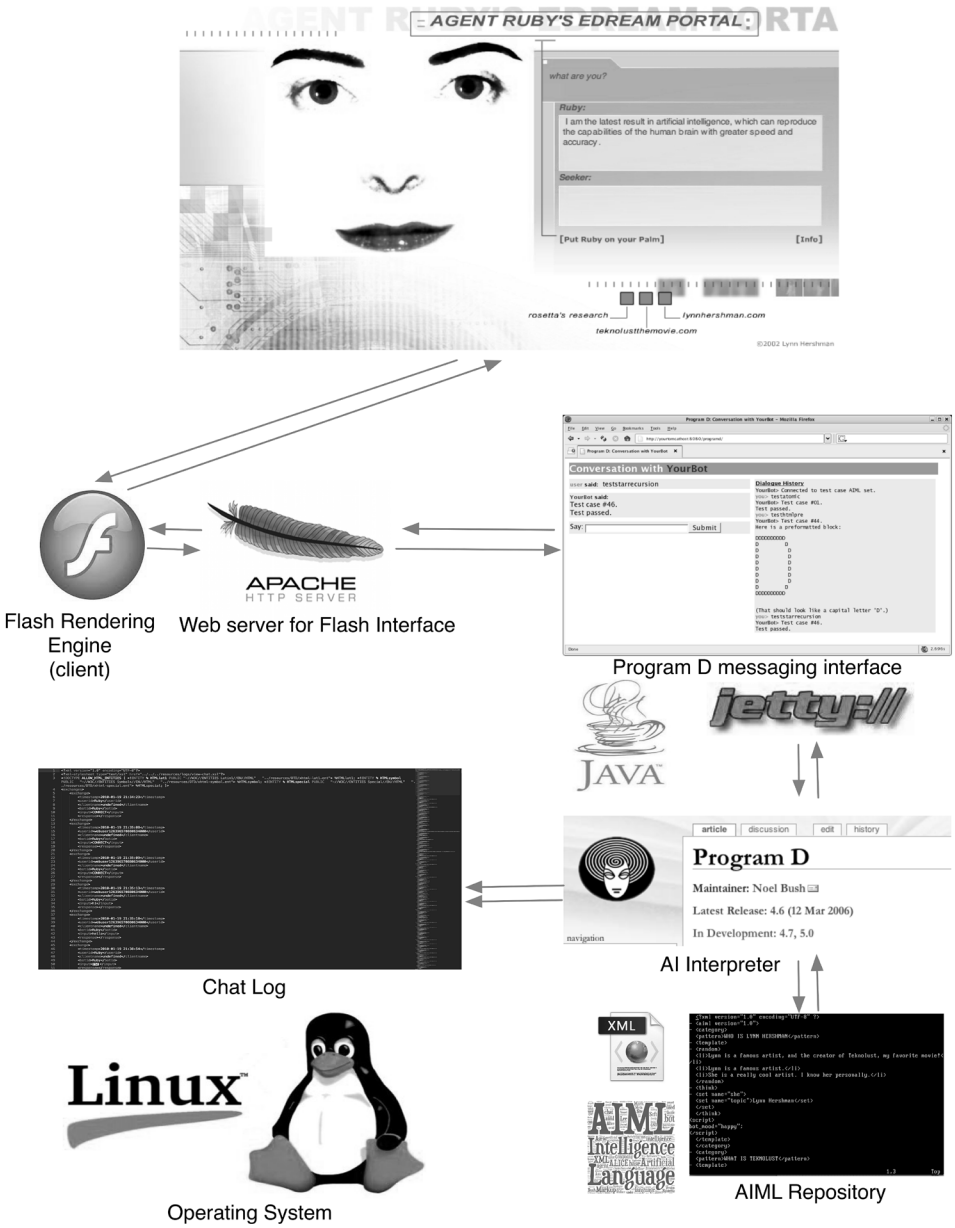

Fig. 2. A technical diagram showing the network of software components and their relationships that comprise the work, *Agent Ruby,* by Lynn Hershman Leeson, 1999–2002, web project, San Francisco Museum of Modern Art, gift of Bitforms Gallery, Paule Anglim Gallery, and the artist. Commissioned by the San Francisco Museum of Modern Art, 2008, acc. no. 2008.230. © Lynn Hershman Leeson. Courtesy SFMoMA. Available at http://agentruby.sfmoma.org.

In the case of *Agent Ruby*, the work was composed of a complex set of software components and processes interacting with each other (fig. 2).

Users interact with Ruby's web-facing multimedia interface, which is served to the Internet via a web server and rendered in the user's browser. This dialog is sent and received by an artificially intelligent natural language processing program called Program D, which was written in the Java programming language. Program D matches user input against a set of possible responses, which Lynn's programmers created to reflect Ruby's personal-

ity. Ruby's personality is a customized set of Artificial Intelligence Markup Language (AIML) files that contains 22,000 entries to create ruby's persona. Once an appropriate response is found, it is then passed back to the visitor and the interaction is recorded. All user input and Ruby's responses are recorded in a log file. At the time of acquisition, 8GB of text had been captured over ten years. In physical terms, this would amount to eight shipping pallets of printed-paper.

The technical complexity and diverse media components that made up these works created a need for new forms of documentation, and the concept of a technical narrative was developed. This is a standardized system for documenting digital artworks. The purpose of the technical narrative is to provide:

- A high level functional description of the work. This is a general description of how the work functions and operates as a whole. This part of the narrative is a platform-neutral description of the work in a general and functional way.
- A modular examination of the individual components of the work and their specific functions. The intent of this section is to look at every individual component of the work in detail. Additionally, a high level examination is given to how all of the parts work as a complete system. This section attempts to map out a general technical schematic of the work.
- A detailed description of the artwork as it exists upon acquisition. This section is specific about the hardware, software, operating systems, languages, algorithms, video codecs, etc. These platforms, components and technologies are examined closely to inform an understanding of how they serve the operational requirements of the work. This section is closely tied to the technical documentation provided by the artist and engineers, describing the pragmatic requirements for operation and display.
- An analysis of the current technology platform and an evaluation of its longevity against the current state of technology. Here we consider the long-term stability of the piece upon acquisition. It calls out strategies and concerns in preserving the work over the long term and informs ongoing conservation and maintenance protocols including possible strategies for migration or emulation.

The technical narrative is now a standard piece of documentation for all digital based artworks that are acquired by SFMoMA including video, audio, and software-based art. This presentation will describe the technical narrative in detail and the processes involved in its creation. Some real world examples from the documentation of software-based artworks and multi-channel video installations will be covered.

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