

GALA 2007 submission document

Title: Global Lab: Co-experience platform in Second Life with MPML3D-scripted agents
Track: Student
Category: Application
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Movie file submitted: sebastianullrich.avi

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Process of development: MPML3D for Second Life (SL) was developed between September 2007 and May 2008, as an essential component for universal communication in the framework of the 'Global Lab' followed by the first author at his intern at National Institute of Informatics. The other authors have been also involved in other components of the universal communication and the emotion gesture chat system. The full credits are shown at the end of the movie. The whole project has been initiated and managed by Mr. Prendinger. Technical supervision and design has been conducted by the first author.

Resources used:

1. Second Life environment for Visualization and Interaction
2. Loquendo TTS and Microsoft Reader for speech generation
<http://www.loquendo.com>
3. C# and Java for programming

Resources required: The system was developed and tested on several off-the-shelf PCs and Laptops. Two different operating systems have been tested: Windows and OSX.

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1. The application and context of the work

MPML3D is used as a scripting language for Bots/Agents in Second Life (SL). Till, now there almost no bots in SL at all, due to the lack of a scripting language. Additional tools support the content creation process by creating dialogues from text and adding gestures/behavior to sentences. Furthermore, the chat system of SL is enhanced by affect sensing and automatic gesture generation (as shown in the last segment of the video). Because facial animations in SL are very restricted, we show the emotions by texturized bubbles floating above the avatars/agents.

2. Novelty

The system features the first scripting language for agents in SL.

3. The architecture

The system and its components are implemented as services that connect to SL and can be experienced with the freely available SL client. Inputs are at the moment sentences, text and scripted dialogues. The output is multi-modal with speech from TTS, pseudo-lip synchronization, gestures and emotion bubbles.

4. Performance

Because the system is running the SL environment it does not require high resources. Due to the server-client architecture of SL and a limited API, the synchronization cannot be solved easily. Still, under the given circumstances our application/tools shows already good results in real-world testing with several SL-clients connected and watching the same presentation given by our scripted agents.

References (optional)

Sebastian Ullrich, Klaus Brüggmann, Helmut Prendinger, and Mitsuru Ishizuka. Extending MPML3D to Second Life. In *Proceedings 8th Int'l Conf on Intelligent Virtual Agents (IVA'08)*, Tokyo, Japan, September 2008. Springer Verlag. (in press)

Helmut Prendinger, Sylvain Descamps, and Mitsuru Ishizuka. MPML: A markup language for controlling the behavior of life-like characters. *Journal of Visual Languages and Computing*, 15(2):183–203, 2004.