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The Engineering Reality of Virtual Reality 2010

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Introduction

Papers this year explore a range of topics including the perceptions of self in virtual environments and the implementation of several techniques for realizing virtual environments in academic settings. Papers regarding the improvement of images in virtual environments included a paper discussing the implementation of shaders to reduce hot-spots on the display walls in the StarCave. A paper from Northwestern looked at the influence of rotation in driving simulation. Papers from the University of Louisiana explored the use of virtual reality tools for developing an interactive trainer for welding. The University of Louisiana has also been exploring methods for letting one walk (or lope) through virtual environments on an omnidirectional treadmill. Dirk Reiners also presented the incorporation of additional gyroscopic and acceleration based sensors from game controllers to improving the latency and accuracy of a tracker. Laura Monroe from Los Alamos discussed their collaborative VR environments used across a large number of scientists.

The perception of self and others and self perception in virtual environments was explored in the next several papers. The papers included work form Quinnipiac University on dissociation in environments such as Second Life. The extension of ourselves into these electronic imaging medias such as Second Life has a broad impact on the way we perceive ourselves and others. These and other thoughts were explored in a wonderfully lyrical presentation by Silvia Ruzanka and Katherine Behar. One of the key realizations and ideas presented was that because something occurred in a virtual environment does not mean that it was not real to the participants in that electronic interchange of images, audio, and ultimately human expression. Work was also presented from Sabanci University on the perception and presentation of the body in these electronic media.

The final session presented work from The University of North Carolina showing a very compelling way to interact with a large multi-projector array which wrapped around a room and could be used as a presentation surface. A paper from The University of Southern California presented work with the Army and Marines on mixed reality training environments and experiments designed to improve the VR training tools available to such forces. A paper from the Industrial Technology Research Institute in Taiwan presented an interesting catalog with an augmented reality interface for exploring furniture. Benjamin Chang from the Art Institute in Chicago discussed the artistic nature of virtual environments. The day concluded with a live demonstration including artwork from several artists presented on a rear projection stereo display with tracked interaction.

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