

*Brett Hall's Masters Thesis Defense*  
*Wednesday, November 28, 2001 at 3:00 PM*  
*SERF Building, Room , UCSD*

**Visual Tele-Exploration using Multiple Cameras and Mobile Avatars:  
An Integrated Framework and Experiments**

**ABSTRACT**

Recent advances in vision sensors, graphics, mobile robotic systems, distributed computing, and high-speed computer networks have inspired a new generation of visualization and telepresence systems. This thesis focuses on the study and development of a visualization and telepresence system that together present an interactive, immersive, and context-preserving display of outdoor information. The developed visualization integrates a variety of types of information such as aerial photographs, campus maps, live outdoor rectilinear video, and custom live omni-directional video sensor (ODVS) perspective views into a single, interactive display. The persistence of context in the visualization aids the remote viewer in more easily comprehending and exploring the outdoor space at different scopes and areas of interest. The developed mobile avatar telepresence system operates indoors and out allowing remote users to interact over a videoconferencing interface. This avatar also provides custom live ODVS video views for integration into the visualization.