MURPA Seminar Friday 1st October 2010 at 9am (please note earlier time - from Illinois)

Venue: Seminar Room 135, Building 26 Monash Clayton

Subject: Augmented Reality

Speaker: Dr Alan Craig NCSA, Associate Director for Human Computer Interaction, Institute for Computing in Humanities, Arts, and Social Science

Abstract

Augmented Reality has turned the corner from a laboratory novelty to a useful way of interacting with digital information in the real world. Augmented Reality (AR) is a low-cost technology that enables the merging of printed materials with dynamic, 3D computer graphics. A viewer sees computer graphics superimposed on the real world, and in registration with the real world. Augmented Reality can be supported through various technological platforms that include a camera, a processor, and a display. This, it can be used with see through head mounted displays, a laptop with a webcam, or more recently with a smart phone. Augmented Reality works by using computer vision techniques to recognize some visual feature, such as a face, a geographic reference point, or a specially created fiducial marker. Then, based on what the camera sees, the system displays a 3D graphical object that is oriented appropriately for the location of the camera with respect to the scene. Augmented Reality has been applied in medicine, science, entertainment, history and social science. In this talk I will address what Augmented Reality is, how it works, how it relates to other technologies such as virtual reality and telepresence, and discuss application areas.

Bio

Dr Craig has worked for NCSA for more than 20 years, and is the associate director of human-computer interaction for the Institute for Computing in Humanities, Arts and Social Science (I-CHASS). He has co-authored a book on virtual reality with William R. Sherman and Jeffrey D. Will which is now available. The book - Developing Virtual Reality Applications - details several virtual reality applications and how they are used in a variety of fields. The authors examine what makes the applications workable and how principles and theories of virtual reality are applied.

Dr Craig is also part of the NCSA's Data-Mining and Visualization Division. Some of the things he is interested in include

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    - The NCSA VIAS information retrieval / archival system
    - Virtual Reality - he does a lot with the CAVE system. If you would
like a demonstration of the NCSA CAVE, check out their demo policy.
    - Scientific Visualization
    - Data Sonification (representing data in sound)
    - Representation of information, perception, display & interaction,
etc.
    - Collaborative Environments, including both immersive systems (such as
CAVEs) and web based collaborative systems
    - Innovative computer based education systems
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