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# 49

Understanding Virtual Environments:  
Immersion, Presence, and Performance

# Course Notes

The 29th International Conference on  
Computer Graphics and Interactive Techniques

Henry B. Gonzalez Convention Center  
San Antonio, Texas USA

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SAN ANTONIO  
**SIGGRAPH**  
2002

## SIGGRAPH 2002

### **Course 49: Understanding Virtual Environments: Immersion, Presence and Performance**

The presence of a person in a virtual environment refers to how similar their total response to that environment is in comparison to their response to an equivalent situation in physical reality. It may include the illusion of being in the environment depicted by the computer displays, rather than in the physical place where their real body is located. It also encompasses social presence, the response to other people encountered within the environment, whether actual on-line people, or virtual people under program control. This course will provide a detailed account of the concept, measurement, and applications of presence, including its relation to task performance and other cognitive and perceptual processes. There are many open research questions related to this, and we will explore some ways forward with respect to these.

#### **Presenters**

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## Prerequisites

This course requires no fundamental prerequisites. It would help if the attendee had some knowledge of experimental design, and of course some personal experience of graphics displays and systems. However, the course will be self-contained.

## Syllabus

### ***Module 1 - The Concept of Presence and How it Can be Measured***

08:30 A Model for Presence - Slater

08:55 Measuring Presence - Slater

09:20 Presence and Usability - Steed

10:05 Discussion - Slater & Steed

10:15 Break

### ***Module 2 - Physiological Approaches to Presence Assessment***

10:30 Commonly Measured Responses - Whitton & Meehan

10:50 Physiological Responses and Presence - Whitton & Meehan

11:15 Collecting and Interpreting Physiological Data - Whitton & Meehan

11:55 Passive Haptics Effects on Presence and Training - Brooks

12:05 Discussion - Brooks, Whitton & Meehan

12:15 Lunch Break

### ***Module 3 - Presence, Social Presence and Performance***

1:30 Presence and Performance - Mania

1:45 Spatial Awareness and Memory Tasks - Mania

2:15 Social Presence - Biocca

3:05 Discussion - Biocca & Mania

3:15 Break

### ***Module 4 - Applications and Design for Presence***

3:30 Designing and Application for Presence - Hodges

3:40 Presence as the Defining Factor - Hodges

4:20 The Design Process - Brooks

5:00 General Discussion - All