

# The Untapped World of Video Games

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### Abstract

Due to fierce industry competition and demand for novelty, games are a fertile research setting for studying interface design, input devices, graphics, social communication and development processes. This SIG proposes to bring together researchers with a wide set of interests, to showcase and discuss their common research platform: video and computer games. We hope to educate both games researchers and interested attendees from the general CHI community. Small group discussions around game play stations will expose participants to the breadth of game genres that are being used by CHI researchers as a research platform as well as popular game genres that are currently untapped.

**Categories and subject descriptors:** K.8.0 [Personal Computing] General---Games; H.5.1 [Information Interfaces And Presentation]: Multimedia Information Systems---Animations, Artificial, augmented, and virtual realities, Audio input/output, Evaluation/methodology; H.5.2 [Information Interfaces And Presentation]: User Interfaces---Graphical user interfaces (GUI), Haptic I/O, Input devices and strategies, Interaction styles (e.g., commands, menus, forms, direct manipulation); I.2.1 [Artificial Intelligence]: Applications and Expert Systems--Games.

**General Terms:** Design, Theory.

**Keywords:** Video games, computer games, entertainment, emotion.

### INTRODUCTION

#### Designing Better Games

The video game industry is one of the fastest growing forms of entertainment with over \$10 billion dollars in 2002 worldwide sales and more than 50% of US households playing computer and video games. Each year hundreds of major software applications are produced by scores of development houses and published by some of the biggest

names in the computer and electronics industry. The business of making video games is big business. Game developers realize that they desperately need to learn how to design for their users. This knowledge has bred a desire to accurately understand and quantify user responses to video games.

The goals of game applications are different from those of more traditional software products. They are to be enjoyed. The key to an enjoyable entertainment experience is not merely creating the most productive or efficient tool. It can, become exactly the opposite. By contrast, gamers like to feel a sense of difficulty and challenge. Ideally this is followed by a sense of overcoming and success. The idea that good software may intentionally cause temporary frustration is a foreign idea to usability methods that are focused on making tasks as quick and error-free as possible.

#### Designing Entertaining Products

A different trend is creating similar needs in other entertainment-related software and hardware domains. A host of non-game software applications have emotional responses and other subjective experiences as design goals. Furthermore, software technologies that were once solely available on PC's are becoming an integral part of consumer electronics devices (e.g., MP3 players, digital imaging, etc.).

This opens up usage to different types of users and scenarios. Even products that have traditionally used explicitly quantitative outcome measures such as errors and time on task will look to compliment measures of efficiency with measures of enjoyment. As feature sets reach plateaus of effectiveness and parity across competing products, productivity tools may look to more subjective criteria for success. Developers will hold liking or enjoyment of the tool as a legitimate design goal.

#### Games as a Platform for HCI research

As a matter of necessity, game designers must create cognitive models and rule sets to guide artificial intelligences and bound interactive behavior. This makes games a perfect test-bed for HCI explorations. Games also contain internal motivation systems to engage users and push them to excel at in-game tasks. In this way, games can be seen as conveniently contained universes in which to observe motivated users behaving in very specific ways.

CHI researchers have taken advantage of existing game platforms to study phenomenon of general interest.

Opportunities for CHI researchers to test domains of interest via games are limited only by the designs of existing games. In some cases, researchers have even become game designers, creating their own game worlds in order to model and test their theories.

### **SIG PARTICIPANTS**

In particular the target group of this SIG will be people using games as a research focus or a research platform.

The primary audience will be a small set of 10-15 games researchers who will host game play stations for hands-on play. This set will consist of both accepted CHI presenters (showing off their research platform) and additional game research CHI attendees. However we expect more attendees outside of this core set.

We foresee three other, major consumer groups for this SIG:

1. We expect attendance by game researchers who are interested in incorporating user-centered design methods into the development of video and computer games.
2. We expect researchers from other entertainment-related software and hardware design domains.
3. We also expect HCI researchers who use games as a platform to study phenomena of broad interest to the CHI community.

Finally, we expect to attract additional CHI participants who realize that they might fruitfully employ games as a research platform to study broader HCI phenomena.

### **SIG ORGANIZATION**

Prior to CHI 2004, SIG authors and station hosts will select games and develop themes for each station. Some of hosts will show games that they use in their own research. Other hosts will show popular game genres that are currently untapped as research platforms. The goals of game selection and theme development will be to demonstrate the breadth of opportunities within game research, highlight the connection between game scenarios and research questions and share solutions to the challenges inherent in designing methods for measuring subjective experience.

The activity plan for the SIG is:

1. Introduction of the SIG goals, game play station hosts and games (15 minutes)
2. Hosts facilitate small group discussions around game stations (75 minutes)

Following the SIG, the attendee list and results of the discussions will be posted at CHI Place (<http://www.chiplace.org/>) following the SIG.

## **STATIONS**

### **Hosts**

Pending confirmation, the following persons have indicated their interest in participating as game station hosts:

Luis von Ahn, Laura Dabbish & Liya Zheng, *Carnegie-Mellon University, USA*; Steve Benford & Andy Crabtree, *University of Nottingham, UK*; Adrian David Cheok & Goh Kok Hwee, *National University of Singapore, Singapore*; Steve Cornett, *Indiana University, USA*; Magy Seif El-Nasr, *Pennsylvania State University, USA*; Grigori Evreinov, *University of Tampere, Finland*; Nicole Lazzaro, *XEODesign, USA*; Rikke Magnussen, *Learning Lab Denmark, Denmark*; Dirk Mortel, *HKU, School of Arts Utrecht, The Netherlands*; Randy Pagulayan, Keith Steury, Bill Fulton, Jun Kim & Paolo Malabuyo, *Microsoft Game Studios, USA*; Elaine Raybourn, *Sandia National Labs, USA*; Jonathan Sykes, *Glasgow Caledonian University, Scotland*; Annika Waern, *Swedish Institute of Computer Science, Sweden*; Zhan Ye, *Blakwell Consulting Services, USA*.

Alternate and/or additional researchers may host stations.

### **Games Genres and Themes**

The following games genres & themes have been proposed as potential station content:

Measuring emotion, input devices, intimate media, mixed-reality games, distributed computing, virtual worlds, online communities, tactile games, handheld games, mobile games, voice chat, online tournaments, content labeling, video game violence, simple matchmaking, emergent properties of interaction, voice command and control, interactive game installations, social learning and motivation, building worlds, music interactive, gender in gaming, and popular video game genres (including but not limited to character-based adventures, educational games, fighting games, first person shooters, massively multiplayer online role-playing games, real-time strategy games and simulations).

Alternate and/or additional game genres and themes may be selected by hosts as final station content.