CS-525H: Immersive HCI

Immersion

Robert W. Lindeman

Worcester Polytechnic Institute
Department of Computer Science
gogo@wpi.edu
What is Immersion?

- “Being There”
- Being in *Flow*
- Natural interaction that recedes into the background
- Tapping into personal experience
Being There: Remote Physical Environment

- Phone
- Video conference
- Teleoperated robots
Being There: Virtual Environment

- Video game
- Immersive learning environment
  - Immersive chemistry
- Surgical simulation
- MMO
Being There: Real Environment

- Hand-held mobile device
  - iPhone/iPad/Android
  - DS/PSP

- In-vehicle system
  - Navigation
  - Traffic
Being There: Described Environment

- Books
- Movies
- Phone sex
Being in Flow

- Introduced by Mihály Csíkszentmihályi
  - Heightened sense of perception
  - Highly focused on primary task
  - In the "sweet spot" between frustration and boredom

- Athletes often report this
- Video gamers too
Characterizing Flow

- A challenge activity that requires skills
- The merging of action and awareness
- Clear goals
- Direct feedback
- Concentration on the task at hand
- The sense of control
- The loss of self-consciousness
- The transformation of time
Natural Interaction

- Recedes into the background
  - Low cognitive load for interaction techniques
  - Visual (and other) feedback can be easily digested
  - Low cumber
The Role of Personal Experience

- We all filter our senses
- Variations in sight, hearing, etc.
- My childhood versus yours
- My mood
- Can we harness this?
When is Being Immersed *Bad*?