IMGD 3xxx - HCI for Real, Virtual, and Teleoperated Environments: Interface Design, Analysis and Redesign

by

Robert W. Lindeman
gogo@wpi.edu
Overview

- We've been looking at all kinds of input and output devices and techniques.

- Your final projects you will:
  - Design a new application, and
  - An appropriate interface.

- What if you had to design a new interface experience for an existing task?
  - This is the point of the Interface Design Report.
  - Make an existing task better, easier, etc.
Approach

- Choose one task from the list you are given
- Perform a detailed analysis of the task
- Determine where inefficiencies or weaknesses exist
- Resolve them by redesigning all or part of the interface
  - Devices
  - Mappings
  - Sub-tasks
Choose a Task

1. Car navigation system
2. Manipulating Google Maps
3. Console-based fighting game (e.g., Mortal Kombat)
4. Home security monitoring
5. Patient monitoring on a hospital ward
6. Urban Search and Rescue Robots
Perform a Detailed Analysis

- What is the **goal** of the system?
- What **sub-tasks** are necessary to complete the task?
- What **skills** does the user/player need to master?
- What **environment** is the task performed in?
- **How often** is the task performed?
- Why was the **current interface** chosen?
Finding Inefficiencies

- Looking at the sub-tasks, where is repetition required?
- Where are the wrong skills, beliefs, etc. being reinforced?
- Where are inappropriate mappings used?
- Where are long motor movements required?
- Where are the delays in the system?
  - System and user delays
Interface Redesign

- How can you correct the inefficiencies?
  - Based on what you know
  - Who could you ask?
- Other devices?
- Other techniques?
- Different sub-tasks?
- Streamlining?
Let's do an Example!