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

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# Overview

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- 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

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- 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

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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

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- ❑ 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

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- ❑ 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

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- 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!

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