Winter 2013

CSE 190: 3D User Interaction

Lecture #2: Overview

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Announcements

- Homework Assignment #1 on-line
  - Due date: January 25 at 1pm
  - To be presented in Sequoiah lab
- Reminder: paper presentations
- Final exam date: conflicts?
- Use Ted for grades and discussion boards

PRIME

For more information on PRIME, please visit: http://prime.ucsd.edu

PRIME 2013

Information Session — January 10, 2013 @ 6pm
UCSD International Center Lounge

Pacific Rim Experiences for Undergraduates:
An International Research Internship

PRIME is an **international research internship** and **cultural experience** that prepares students for the global workplace in the 21st century.

- Students have two mentors, a researcher at UCSD and another one at the international internship host site.
- Students do research at advanced institutions on the Pacific Rim countries, including Australia, China, Japan, Taiwan and more!
- Basic expenses are covered by grant funds.

At the information session you will hear from the program directors about the program and application process, from UCSD mentors about the opportunities, and from former PRIME students about the experience from their perspective.

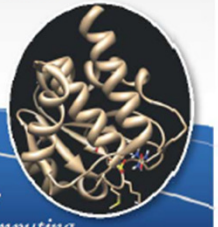
Please Join Us!

Hear from PRIME Alumni!

Find out how you can apply for this exciting opportunity!

Gain research experience abroad and contribute to the international scientific community!

"PRIME gave me a hands-on perspective as to how research can be fun in an international context."
Harriet Hu, 2012 PRIME Australia Alumna



"Without question, PRIME was the most influential experience I had during my time as an undergraduate at UCSD. The foundation of knowledge in high performance computing that I acquired through PRIME is something that I have continued to use every day in my research career."
John Colby (UCLA: MD/PhD), 2004 UCSD PRIME Australia Alumnus

Homework Assignment 1

- Assignment review
- Q&A

Interaction Goals

- Performance
  - efficiency
  - accuracy
  - productivity
- Usability
  - ease of use
  - ease of learning
  - user comfort
- Usefulness
  - interaction helps meet system goals
  - interface relatively transparent so users can focus on tasks

Universal 3D Interaction Tasks

- Navigation
  - travel: motor component
  - wayfinding: cognitive component
- Selection/Picking
- Manipulation
  - specification of object position & orientation
  - specification of scale, shape, other attributes
- System Control
  - changing the system state or interaction mode
  - may be composed of other tasks
- Symbolic Input (text, numbers)

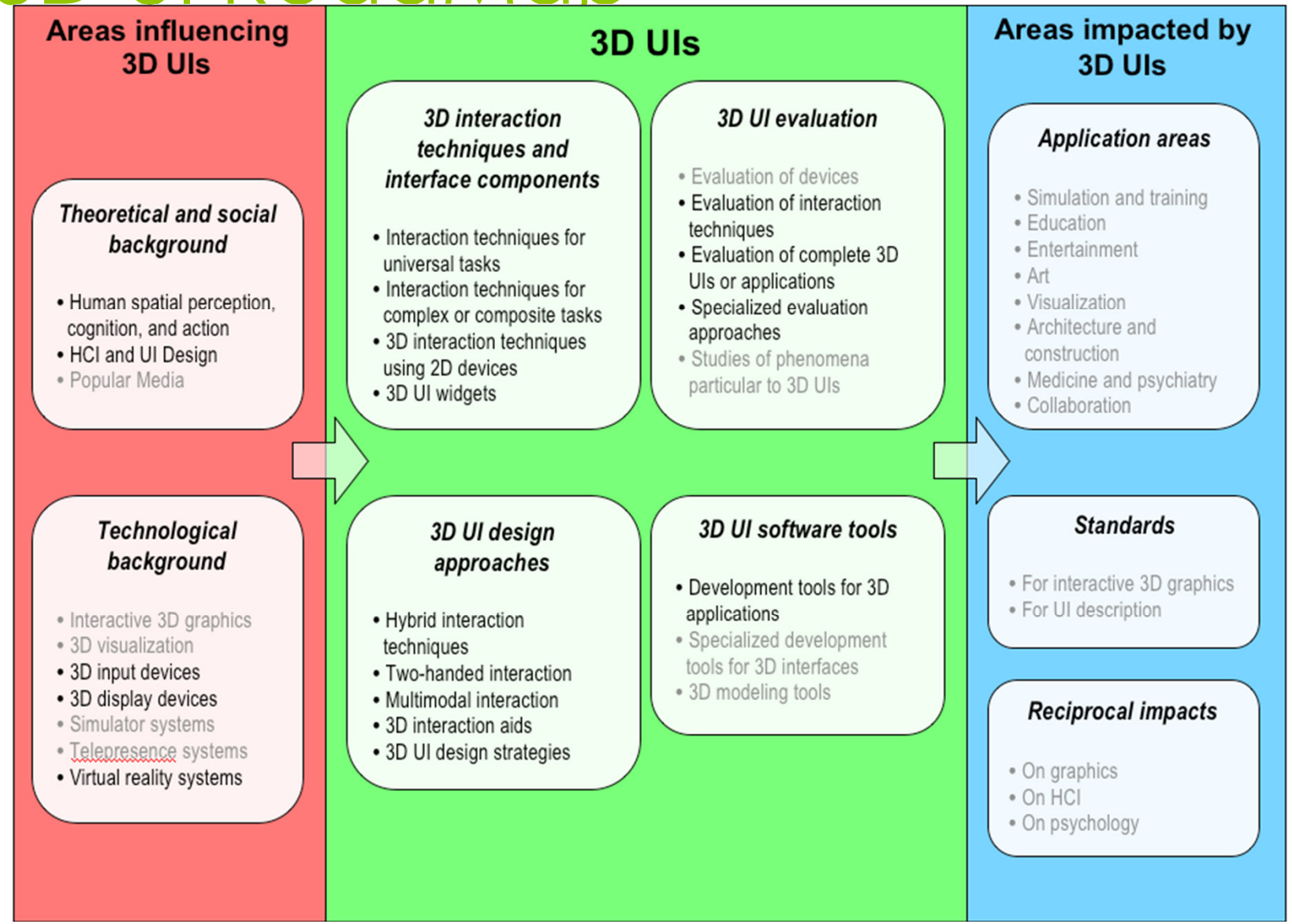
3D UI Design Philosophies

- Artistic approach: Base design decisions on
  - intuition about users, tasks, and environments
  - heuristics, metaphors, common Sense
  - aesthetics
  - adaptation/inversion of existing interfaces
- Scientific approach: Base design decisions on
  - formal characterization of users, tasks, and environments
  - quantitative evaluation results
  - performance requirements
  - examples: taxonomies, formal experimentation

Applications

- Architecture / CAD
- Education
- Manufacturing
- Medicine
- Simulation / Training
- Entertainment – *Games!*
- Design / Prototyping
- Information / Scientific Visualization
- Collaboration / Communication

3D UI RoadMap



Interaction Workflow