Cognitive Science 102C: Cognitive Design Studio (Week 2)

Encourage wild ideas

Be visual

Prototype everything
IDEO: Deep Dive
Assignments

• Assignment 0: Create an individual wiki page. You should post an update to this page at least weekly, starting this week. Posts should be made by Sunday evening each week.

• Assignment 1: By this evening (4/5) add a page under the thoughtless acts page on the wiki with an example of a thoughtless act. Include an image, brief description, and any design idea it generates for you. Be sure to also include your name. IAs and TAs please also join in this exercise.

• Assignment 2: By next Monday evening (4/11) select an object that you think is particularly well designed, one you love to use. If convenient bring it to class next Tuesday (4/12). If not that is fine too. In all cases add a description of the object and your reasons for the selection on the Well-Designed Objects page of the wiki by Monday evening (4/11). Be sure to also include your name. IAs and TAs please also join in this exercise.

Remember Exam I is Thursday 4/14. Chapters 1-6 and lectures.
Groups

• Today: Present suggested projects
  – Many advantages to working on one of these

• Thursday: Your project suggestions and discussion of all
  – Description and slide or two to me by Wednesday evening
  – To convince me to approve must be as promising as suggested projects

• Groups form by end of week. Elaborate and refine project focus during week 3. Group project presentations week 4
Working Together

• Stay focused on the project objective—reiterate your goals at each team meeting. Be realistic and focused about what can be accomplished in a meeting. Do rather than talk about doing. Ratholes. Meetings are an investment of time. Make sure you get full benefit from the investment.
• Establish your team’s ground rules. How will your team make sure everyone is engaged and the work is getting done? How will you communicate during and between meetings? How will you monitor progress and change direction, if necessary?
• Practice self awareness. Are you listening, integrating input, thinking flexibly?
• Be aware of others. Is the group working well together? Is there an “elephant in the room” that needs to be addressed?
• Focus on ideas, issues and tasks. Don’t make things personal. These are professional work relationships. When there is a difference in opinion, refocus on the principal question, what data and information are needed to make a decision, and what are the implications of your decision
Working Together

What
• Continually articulate the objective of the project.
• Define and continually refine how you will achieve that objective.

Who
• Identify someone to take notes at each meeting. Like all group functions this should rotate.
• List the jobs that need to be done. Make sure all jobs are covered and that, over the course of the term, everyone has the opportunity to do each job.

How
• Outline the individual steps that you need to take to achieve your objective.
• If you don’t know the steps, identify pertinent questions or tangible products. Break the objective into component parts, tasks and subtasks.
• At the end of each meeting, define and document your immediate next steps.

When
• Set interim goals with specific dates.
• Make sure everyone has action items to be accomplished by the next meeting.
Project: GreenLight

- Project GreenLight: http://greenlight.calit2.net/

The Information Technology (IT) industry has recently been estimated to have the same carbon footprint (energy consumption) as the airline industry. Airlines have invested heavily for decades in more efficient engines, lighter airplanes and optimized scheduling to save energy consumption.

- How to make green energy-efficient decisions for information technology and storage?
- How do people think about IT energy usage?
- What are effective ways to visualize energy usage data?
  - http://glimpse.calit2.net/
  - http://www.calit2.net/~jschulze/tmp/aesop-greenlight.wmv
Visualization of Energy Use

- UCSD Energy Dashboard [http://energy.ucsd.edu](http://energy.ucsd.edu)
  - If you cannot measure energy use, you will not be able to make much headway in reducing your energy footprint

- Dashboard allows users to see up-to-the-second information on a structure-by-structure basis for 60 of the largest buildings on the La Jolla campus. The data is provided by UC San Diego Physical Plant Services from over 200 energy meters providing energy usage at the building level. The portal also features information coming from roughly 40 individual power meters that measure energy consumption in the office, e.g., a computer and monitor drawing power from a single socket. A denser deployment of meters, which would measure and display individuals’ energy use, is currently under planning and development.

- 25% of energy usage in a typical office is the PC and much of the time it is turned on but doing nothing
Potential Projects

• How do individuals (students, faculty, staff), groups, and departments, think about energy usage? What do they do now to minimize?

• Evaluate effectiveness of current visualizations of energy usage

• Explore potentially more effective ways to visualize energy usage data

• Potential of public displays (example disk usage wall size display), competitions, …
Project: ChronoViz

ChronoViz

A system for supporting navigation of time-coded data

Adam Fouse, Nadir Weibel, Edwin Hutchins & James D. Hollan
University of California, San Diego
Project: ActivityTrails
Project: Plink

1. Digital resource is in focus

2. Hold pen down to start link creation

3. Draw any one-stroke link symbol
Project: Write-N-Speak
Write-N-Speak Generalization

• Consider existing system as instance, how to generalize?

• Numerous potential domains: classroom note taking (notes uploaded to different notebooks, todo, etc), medical notebook, ethnography field notes, image-based story telling, musical notebook, … Empowering end users to create digital pen applications with minimal programming knowledge
Project: Anoto Pen for Podcast
HIPerPaper: Introducing Pen and Paper Interfaces for UltraScale Wall Displays

Figure 2: HIPerPaper Interface
Future Health Care
Project: **Bilingual museum exhibits for bilingual kids**

Client: **San Diego Natural History Museum / Bilingual Exhibits Research Initiative**

Document and describe various uses of bilingual museum exhibits. Work with an extensive video corpus, employing qualitative and quantitative methods.

Examine patterns of social interaction, use of written and spoken language, and interaction with objects.

Develop and test design alternatives for bilingual exhibits, with particular emphasis on language content.
Project: Creating Spaces that Promote Community

Client: UCSD Cognitive Science Department Graduate Students

Collect data to learn about current practices related to social interaction, exchange of ideas, and intellectual collaboration in the UCSD Cognitive Science community.

Data may include direct observation, video recording and analysis, individual and group interviews.

Develop and test environmental design concepts that create conditions that encourage social interaction, exchange of ideas, and intellectual collaboration.
The Web framework for perfectionists with deadlines.
Django makes it easier to build better Web apps more quickly and with less code.

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UC San Diego Ranked 11th in the World by Nature for Number of Research Papers Published
Alumni Reunion April 16 - REGISTER now!
Brain Awareness Video Contest
PhD Defense: Jenny Collins

My research explores the cognitive consequences of computationally-based media. It is motivated by a belief that we are at the beginning of a paradigm shift in thinking about representational media, one that is starting to appreciate the importance of representations that are not only dynamic and interactive but that also adapt to the structure of tasks, the context of activities, and even our relationships with others. The goal is to better understand the cognitive, computational, and social ecology of these dynamic interactive media.

My interests span across cognitive ethnography, distributed and embodied cognition, human-computer interaction, multiscale information visualization, multimodal interaction, and software tools for visualization and interaction. My current work involves four intertwined activities: developing theory and methods, designing representations, implementing prototypes, and evaluating the effectiveness of systems and understanding the broader design space in which they are situated.

Current research is funded by the National Science Foundation (NSF) and the Chancellor's Interdisciplinary Collaboratories Program. Recently completed research has been funded by Columbia's Digital Media Innovation Program. Depa, Intel, Microsoft, NISO, NSF, and the UC MICRO Program.

CURRENT ACADEMIC YEAR [Course List]

Fall 2010
Cognitive Science 10: Cognitive Consequences of Technology (ciss 10)

Type & Thurs 3:30-4:50 Cognitive Science 004

Cognitive Science 120: Human-Computer Interaction (ciss 120)
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