HCI design studio

MANEESH AGRAWALA AND MICHAEL BERNSTEIN

cs247.stanford.edu
Fifteen designs

In which the professors start class *en media res*
Communicate with a quadrotor drone

Suppose the drone is autonomous, has a camera, projector, mic, & speakers
Generate and sketch out fifteen ideas each
You have seven minutes: go!
Share your ideas with your table

Show your favorite two ideas
Each table nominates one to share with the class
Your table can’t repeat previous tables’ ideas
Visual communication

It’s not art.
You can draw.

Hint: you were five years old once.
Sketching is for communication

So the user or your design colleagues can understand your concepts
Begin sketching lecture

We’re going full-on Verplank. This part of lecture will not be in the published slides.
Fifteen designs

Let's try it again, this time with your new skills.
Send your sketches to The Wall

You know nothing, Jon Snow.
Needfinding
Needfinding

In desperate search of ourselves
Needs for:
Getting to Stanford
What you already know

- Needfinding teaches us how people act today
- **Contextual inquiry**: a structured set of practices that support needfinding
- **Task analysis**: helps improve at the micro-level
OBSERVATION
Tacit Knowledge: Deep Hanging Out
1. What do people do now?
2. What values and goals do people have?
3. How are these particular activities embedded in a larger ecology?
4. Similarities and differences across people
5. ...and other types of context, like time of day
INTERVIEWS
Choosing Participants

- Representative of target users
- May be current users of a similar system
- Might also be the non-users
Say you were designing...

• A lecture support system
• Who would you interview?
What Are Good Questions?
“Would you like stores with less clutter?”
“What would you like in a tool?”
Other Types of Questions to Avoid

• What they would do / like / want in hypothetical scenarios
• How often they do things
• How much they like things on an absolute scale
• Avoid binary questions
“Tell me a story about yourself”
Good Questions
Conducting An Interview

- Introduce yourself, explain your purpose
- The interview is about them, not you!
- Begin with open, unbiased questions
- Ask the question and let them answer
(a little bit of)

Silence is Golden
Follow up

• Adjust your questions to their previous answers
• Ask questions in language they use / understand
• Pick up on and ask for examples
• Be flexible
Plans are useless
Planning is invaluable
Do a Trial Run first
(gives you practice, catches bugs)
where to interview?
Photos Are Powerful Reminders
Sketches Force Focus
Observation alone does not guarantee a great design.
(separate slide deck)
This quarter’s theme

Let me serenade the streets of L.A. from Oakland to Sack town
The Bay Area and back down
Project 1
Trainspotting

- Goal: need finding and visual communication skills
- Brief: observe, interview and sketch the Caltrain rider experience

- Part I due Wednesday: observe and sketch (2pt)
  - Collect it all in your sketchbook, scan and submit
Trainspotting

• Part II due Monday: interpret (8pt)
  • Going from observations to needs and actionable design directions

• Much more at cs247.stanford.edu
Class goals and logistics

Because it wouldn’t be the first day of class without them.
Why CS 247?

- What was challenging about fifteen designs?
- What if it weren’t fifteen ideas? What about thirty? One hundred?
- Communicating your idea clearly and graphically
- CS 147 black-boxed important parts of the design process
What is this course about?

- Studio learning and critique
- Visual communication using both bits and atoms
- Rapid ideation and prototyping
- Advanced domains for HCl: ubiquitous computing, social computing, digital art, visualization and more
Design studio

- Popularized by the École des Beaux-Arts in France in the 1800’s
- Learning-by-doing with expert critique
Studios

- Class is split into two studios of ~20 people each
- Each studio is led by a faculty member and TA
- Studio instructors will lead your critique, feedback and grading
Our project rhythm

• Assignments will be due by the start of class (1:30pm)

• Some assignments graded formatively…
  • Points for completing the requirements of the assignment
  • Typically worth fewer points
  • √-, √, √+ feedback to guide your progress
  • Can be redone and resubmitted at the next studio for additional feedback.
Our project rhythm

- Assignments will be due by the start of class (1:30pm)

- Other assignments graded summatively…
  - Traditional rubric-based, graded feedback
  - Worth many more points

- Goal: use the formative assignments to get our advice and feedback in a safe space, so that you can maximize your performance on the summative assignments.
Our project rhythm

- Example:
  - Project 1, Part I: *formative*, observe and sketch. Due this Wednesday, feedback in class.

  - Project 1, Part II: *summative*, (go re-observe if necessary), interpret and produce needs. Due Monday.
Three projects

- P1: needfinding and visual communication
- P2: visual design for the web
- P3: class project
Grading

- Heavily project-based (90%):  
  - Project 1: 10%
  - Project 2: 20%
  - Project 3: 60%

- Participation (10%):  
  - 5% for studio participation
  - 5% for team participation
Attendance

- This class is a studio, where a lot of the learning happens in class through a mixture of lecture, activity, and project work.

- For this to work, attendance is mandatory.

- There are two pre-excused absences allowed — post on Piazza in advance.
Prerequisites

- We expect that you have background in design thinking fundamentals (e.g., CS 147) and web programming ability (e.g., CS 142).

- If you are from a department other than CS, SymSys, and MS&E, let’s talk. We want a diverse classroom.
Materials

• Buy a sketchbook and thick pen.
• Make sure you can easily tear out pages.
• This is required as part of P1. Get it today, use it tomorrow. Bring it to every class.

• Stanford Bookstore,
  Amazon Student Prime,
  art store on California Ave
Studios and instructors

a.k.a. character select screen
The structure of studio sessions

- This class is called HCI Design Studio. Studio forms the centerpiece of the class.
- You will share, critique, and be critiqued each week as part of your project deliverables.
- **Design critique**: focused feedback to guide your ideation and prototyping process.
  - More on this soon
  - This isn’t routine feedback: it’s guidance intended to push you
  - Ignore critique at your peril
Introductions

Did you know: the university officially calls them CAs?
Michael Bernstein

- Assistant Professor, Computer Science
- Co-director of the Stanford HCI Group
Maneesh Agrawala

- Professor, Computer Science
- Director, Brown Institute for Media Innovation
- HCI / Graphics / Visualization
Project 0: sign up for studio

- Due at midnight tonight, and required in order to take the class
- It’s at http://hci.st/247signup
- We’ll run a random lottery to get to 40 people, and have a waitlist
- Form is on the website
Questions?

Ans: 42