CSE440: Introduction to HCI
Methods for Design, Prototyping and Evaluating User Interaction

Lecture 01: Introduction

Nigini Oliveira
Manaswi Saha
Liang He
Jian Li Zheng
Jeremy Viny
Who we are

Nigini Oliveira

Studied computer science in Brazil
PhD in CS in 2017
Postdoc in CS here at UW
Work in cross-cultural collaboration and online experimentation
Likes literature and long distance bike rides
Who we are

Manaswi Saha

PhD CSE Student
Work in HCI and Urban accessibility
Have done past research on energy sustainability in India
Completed Bachelors and Masters in India
Trained in Indian Classical Music (vocals), like to travel
Who we are

Liang He

Studied Software Engineering/HCI in China, HCI in US
Master in Computational Design at CMU, 2015
CSE PhD student in HCI here at UW
Work in fabrication techniques (e.g., 3D printing) for social good
Likes painting, art, design, and travel

www.lianghe.me
Who we are

Jian Li Zheng

**Schools:** International Studies at U of Wisconsin, 2nd year Masters in HCDE here at UW

**Work:** UX research intern at Airbnb, product design intern at Remitly, UX researcher at URI

**HCI focus:** products/services that have an offline - online mix, and community building

**Let’s chat about:** hiking all the great trails, Asian food, your favorite and least favorite user experiences.
Who we are

Jeremy Viny

I Studied Neuro Economics and Art at Ohio State University. Currently, I am pursuing a Masters of Design in the School of Art + Art History + Design.

Research Focus: Design Research. In particular domestic IoT

Hobbies: Woodworking and furniture restoration.

Jerviny.com
HCI at UW

Cross-Campus HCI Efforts
DUB - weekly seminar at noon on Wednesdays
MHCID

My Teaching
CSE 440: Introduction to HCI
INFO 360: Design Thinking

Back in Brazil
All sorts of Software Engineering courses.
What is this course about?
Once upon a time...
We use personalized results...

Have a look at your results!

How good are you at data analysis?

Professional: You're ready to mentor others.
You are so close to the top! You accurately interpreted most of the tasks. With a little effort, you could surpass the rest of the field.

How do you compare?
You got a score of 90%. You did better than 100% of test takers.
How can we help researchers?

LabintheWild experiments can be accessed via the LabintheWild homepage (see left image below) or directly through a link to a specific experiment. All of our experiments start with an informed consent page and end with personalized results. The order of the remaining parts largely depends on the type of experiment. The image below shows a very common order.
We created Digestif...
We created Digestif...
Learn about the problem.
Inventing (many, many) solutions...
Prototyping and testing...
Not easy to get here!
What is this course about?

It is about reading, discussing, examining, and practicing techniques that build this design process.
Activity (10 minutes)

In groups of 2…

Redesign bulky headphones:
- What problems do you want to solve?
- How does your design solve them?

Make sure you are either addressing a novel problem (something nobody has tackled before) or you are contributing a novel solution!

Sketch out your design on a piece of paper and be prepared to show it off to the class!
What problems did you choose to solve?

What problems did you choose not to solve?

What’s your solution to those problems?
What process did you use for this activity?

What was hard and what was easy?

Anything you would do differently if you were to do this again?
“[Design is] a plan for arranging elements in such a way as to best accomplish a particular purpose.”  

Charles Eames
Core design skills

To **synthesize** a solution from all the relevant constraints

To **frame**, or reframe, the problem and objective

To create and **envision** alternatives

To **select** from those alternatives

To visualize and **prototype** the intended solution

Bill Moggridge
Iterative Human-Centered Design

This is a course about process

This is not an implementation course!

This is also not a course about “good” interfaces or rules that you should follow in design

Rapid iteration and exploration is the most important and effective tool for design
Learning Objectives

Understand what human-computer interaction and interaction design are

Develop skills on using design methods

Learn how to create design artifacts: scenarios, storyboards, prototypes

Think critically about design solutions

Learn how to do user testing

Communicate effective design critiques and defense
Course structure
(All details: courses.cs.washington.edu/courses/cse440/18au/)

Much more than theory
- But still some lectures and readings

Many in-class exercises
- Participation is a critical component of the course

Friday Section is primarily studio time with the TAs
- You will work on your project within section
- Participation is a critical component of the course

This course is designed around rapid feedback!
Project Overview

The core of this course is a group project

Propose and do an intense end-to-end design

First step: Getting the Right Design
Second step: Getting the Design Right
Third step: Communicating the Design
Project Overview

Talk to people, investigate problems

Sketching and Storyboarding

Low-fidelity Prototyping

Digital Mockup

Presentation & Communication
Projects from two previous quarters

https://.../courses/cse440/17au/projects.html

https://.../courses/cse440/18wi/projects.html
Project Theme:
Designing for Diversity
Design for Diversity

Thailand    Rwanda    Switzerland

[Reinecke and Bernstein, 2013]
Design for Diversity

[Oliveira et al., 2016]
Design for Diversity

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<thead>
<tr>
<th></th>
<th>Permanent</th>
<th>Temporary</th>
<th>Situational</th>
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<tbody>
<tr>
<td><strong>Touch</strong></td>
<td>One arm</td>
<td>Arm injury</td>
<td>New parent</td>
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<td><strong>See</strong></td>
<td>Blind</td>
<td>Cataract</td>
<td>Distracted driver</td>
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<tr>
<td><strong>Hear</strong></td>
<td>Deaf</td>
<td>Ear infection</td>
<td>Bartender</td>
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Microsoft Inclusive Design Toolkit
Designing for diversity in this class

Can be anything from designing technology for:
- a specific population
- civic engagement
- supporting interactions between diverse groups.

What are the problems that people face in their communities?

Think BIG!

Design a system to support one particular kind of activity or relationship that is important to you but which is not sufficiently well supported by current tools.
Characteristics of a good project

You are passionate about it

The problem itself is clear: your prototype will fulfill a clear goal

It is novel

It needs to be well scoped

It is not another app! :)}
Characteristics of a good team

1. Psychological Safety
   Team members feel safe to take risks and be vulnerable in front of each other.

2. Dependability
   Team members get things done on time and meet Google's high bar for excellence.

3. Structure & Clarity
   Team members have clear roles, plans, and goals.

4. Meaning
   Work is personally important to team members.

5. Impact
   Team members think their work matters and creates change.

re:Work (with Google)
Grading

Design is subjective, and so is this course.
- We can't really run a unit test and grade your design =)
- Wow us with your work, not with complaining

Entire project process is designed for feedback
- Milestone grades mean you did the milestone
- You must act on feedback (does not mean saying yes!)

A focus on **doing the work** and **searching for feedback** means final grades are more quality of result
Staying in Touch

https://courses.cs.washington.edu/courses/cse440/18au/

Calendar: You are responsible to keep track of the calendar

Canvas: To upload assignments etc.

Email Us: cse440-staff [at] cs.washington.edu

News: Canvas posts: make sure you are been notified
Adding and Dropping

This is going to be a challenging course. But rewarding.

Attempting to Add
Say something to me after class

Considering Dropping
Do it ASAP! Please, communicate it
Be considerate, and do not drop after we assign groups next week (But don't drop, it will be fun!) ;)

Section switch availability
We may need to move people to balance sections
Expectations

We are all learners here, let's make this a fruitful experience

Be professional
- Respect above all
- Helpful criticism (we'll learn more about this)
- Peer learning & support
- Show up on time, don't plagiarize, and all that!

Gadgets
- In general no, maybe for note taking (not recommended)
- (Gadget use lowers grades of all around you)
- Prefer paper here… It will be your friend in design
Ask me something!