Introduction to Human-Computer Interaction

CS 464, Spring 2018

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Adapted from materials originally created by Prof. Jamie Ruiz

Learning objectives:
1. Understand the focus of the class and its purpose
2. Understand instructor expectations
3. Learn topics we’ll cover
GOAL of this Class

Become critical of technology and understand users must come first.
What’s best?
What’s the problem with tech?
More recently...
You can build great technology...

...but unless it meets a real user need, is useful, usable, and melds with the users’ culture, it won’t be adopted
Without Focusing on Users...

Technology just happens...

...and it can be rather cumbersome when it “just happens”
But if You Understand Your Users...
The question is no longer, “Can we build it?”
The questions now are: “What are we going to build....”
“..... and why?”
Designing Technology

Designing useful, usable, elegant, exciting, and desirable technology is hard

It is critical to understand users in depth:

Their needs, motivations, desires, skills, existing knowledge, expectations, constraints, culture, and their goals
Designing Technology

If you understand users’ true needs independent of technology, you stop thinking in terms of existing technological solutions to a problem

...and start thinking in terms of how to solve the actual problem

When you understand users at this deep level, truly innovative technology can result
CS 464

Develop *innovative* technology that meets users’ needs

Sensitive to people’s *real* needs

Concern: *people* and their *tasks*

How can we make their lives better?
In contrast to other CS courses, technology will take a back seat to people
HCI is Interdisciplinary

You will learn and apply methods from multiple disciplines
Class Topics
My Background

Work: Hewlett Packard and Agilent

Research: Cross-cutting system property modeling and analysis
Requirements modeling and analysis

Teaching interests: Software engineering/design, Human-Centered Design, active learning
Class Communication

http://www.cs.colostate.edu/~cs464

Progress page – ENTIRE semester schedule

Canvas:
  Submissions, Grades

Class Contacts:
  cs464@cs.colostate.edu

Piazza
Class Preparation

No required text – CRITICAL that you study topic guides and readings listed on Progress page

Most will have associated Canvas quizzes that must be completed BEFORE class the day they are due
Course Expectations - Prep

Active learning techniques and learner-centered instruction requires:

proper preparation and class participation

Class participation is 10% of your final grade in CS 464
Course Expectations - Class

Attend all classes, arrive on time, focus on the discussion

You will be challenged in this class; apply critical thinking to master skills

Take the initiative and leadership in your education
What it takes to succeed

You are required to work at least 12 hours per week outside of class

Work on assignments and the current part of the project every day

Reflect about how to improve the way you work and how you work as a team
How to fail CS 464

Believe that this class will be easy and that you can learn by only coming to class or memorizing facts

Anyone can look up facts on Google. To be able to truly contribute and make a difference you must demonstrate mastery and critical judgement skills over what you learn.
Electronic devices in class

Unless directed specifically for an in-class activity:

Only use a laptop/tablet/other electronic device to take notes.
  - Turn off wireless.

Laptop/tablet users:
  - Sit in the back row starting from the corners.

Put away your cell phone!

Disregarding any of these policies may result in being asked to leave.
Getting Help

Micro-surveys

Piazza

Talk with me, Guru, and your peers

Sometimes issues may come up:

We can help you initially to figure out how to solve the problem. If you need help, please ask
Micro-surveys

Given at the end of each class
3 things you understand
3 things you don’t understand

For guest lectures/videos:
3 things you understand
3 things you’d like to hear more about

Additional micro-survey on Ethics (A2)
## Grading

<table>
<thead>
<tr>
<th>Activity</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Participation (activities/iClicker)</td>
<td>10%</td>
</tr>
<tr>
<td>Assignments/Canvas Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Test 1</td>
<td>20%</td>
</tr>
<tr>
<td>Test 2</td>
<td>20%</td>
</tr>
<tr>
<td>Term Project</td>
<td>40%</td>
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There are no make up tests, quizzes, or in-class activities. Work with me at least 1 week in advance for University-sponsored events.
Class Participation: iClicker Quizzes & In-class Activities

iClicker Quizzes: unannounced

In-class activities: practice skills and give quick feedback on student work

Credit based on team results and on individual self-evaluations done at the end of class.

Receiving credit in this category will require you to read and prepare beforehand. Arriving late or unprepared will result in no credit and/or you being asked to leave.
Assignments and Canvas Quizzes

Ethics class, readings, guides, mind maps

Canvas quizzes: hard deadlines prior to class on the due date
Tests

2 parts:

**Team** portion: open book

**Individual** portion: closed book, closed notes EXCEPT for one 8.5" x 11" paper containing any notes you want to bring to the exam
Project Overview

Project groups – DUE Wed Jan 24
Project proposal – DUE Sat Feb 3

3 major parts/phases:
  Field studies & Analysis
  Design
  Evaluation and re-design
Project Overview

You will need to work with **real** users for each phase of the project so you must coordinate with people outside your project. Finding users to study is **hard**. **Start thinking now.** A great user group can lead to highly innovative, valuable projects.
Project Deliverables

All Phases: Group presentation and written report

• e-poster of phase results, receive feedback from others during class

Extremely helpful in improving your project
Other Project Deliverables

Phase 2: 3-5 min video
Phase 3: 7-10 min video; more in-depth walk-through of your final high-fidelity prototype
Project Feedback

Phases 1 and 2: You will receive peer evaluation feedback
Incorporate feedback into next phases!
Project: Users

Project focus:
Create:
useful
usable
effective computational designs

That demonstrably meet real-world needs
Project: Users

Study *real* people with a *specialty*

Your study of their practices will generate needs, then designs.

Choose people with whom you can interact throughout the term.

*The more different they are from you, the easier your job will be.*
Project: Scope

Final deliverable:
High-fidelity prototype - no fully functional systems!

High-fidelity prototype must demonstrate full interaction design of your system.

No “magical” systems. Must be demonstrably feasible using current technology.
Project: Scope

Potential final forms the computational system can take:
  mobile devices
  wall-based devices
  embedded computation
  ....

Whatever form factor best meets identified user needs.
An Awesome Project

ButterflyNet system:
https://www.youtube.com/watch?v=Vf6XsL49_Jw

Remember this is a video showing a high-fidelity prototype – how the proposed system will work...
Alan Cooper
Inventor of the idea of ‘personas’...
On narratives and what users want:

Understanding Personas - An Interview with Alan Cooper

• 41:57 – 43:37
• 27:51 – 28:58

https://www.youtube.com/watch?v=G7ljzXB40hw