CSCE 572
Human-Computer Interaction
What is it and why is it important?
Dr. Yan Tong
August 23, 2021
Today’s Agenda

• Welcome
• Various administrative issues
• What is HCI
Health and Safety

Follow current COVID-19 guidelines
https://sc.edu/safety/coronavirus/safety_guidelines

• Face coverings
• Seat map – keep a track who sit together for contact tracing
About Dr. Tong’s HCI Related Research: Multimodal Affective Computing
Major Applications

✓ Behavior analysis
  ➢ Medical diagnosis
  ➢ Psychology

✓ Security
  ➢ Cybersecurity
  ➢ Video surveillances
  ➢ Deception detection

✓ Human-centered human-computer interaction
  ➢ Providing feedback from user to system
    • Virtual reality
    • Augmented reality
  ➢ Interactive gaming and commercials
  ➢ Computer-aided online education
Now, tell me about yourself!

- Name
- Grad or Ugrad?
- Major
- Why do you take HCI?
Class Communication

- **Class homepage**
  [http://www.cse.sc.edu/~tongy/csce572/csce572.html](http://www.cse.sc.edu/~tongy/csce572/csce572.html)

- **Course syllabus**

- **Blackboard** ([blackboard.sc.edu](http://blackboard.sc.edu))
  - Course syllabus
  - Tentative course schedule
  - Lecture notes
  - Discussion board
  - Submit your assignments, quizzes, and exams through Blackboard

**Check them regularly for**

- Important announcements related to this course
- Some useful links and additional readings
Structure of the Course

• Lectures
• Group work

You need to bring your laptop to class for
• Quizzes
• Exams
• Team work on projects
Grading System

- A (90-100%)
- B+ (86-89%)
- B (80-85%)
- C+ (76-79%)
- C (70-75%)
- D+ (66-69%)
- D (60-65%)
- F (0-59%)
Grading Policy - Undergraduate

Your grade consists of

- Quizzes (5%)
- Two exams (20% each)
- Individual assignments (10%)
- Team project
  - Topic definition and understanding of the problem report (5%),
  - Design alternative presentation (5%),
  - Final project presentation (10%),
  - Final written report (15%), and
- Participation grade (10%)
Grading Policy - Graduate

Your grade consists of

- Quizzes (5%)
- Two exams (15% each)
- Individual assignments (10%)
- Paper reading and written report (10%)
- Team project
  - Topic definition and understanding of the problem report (5%),
  - Design alternative presentation (5%),
  - Final project presentation (10%),
  - Final written report (15%), and
  - Participation grade (10%)

Additional requirements in the assignments, project, and/or exams to get graduate credits
Attendance Policy

Class attendance is required according to UofSC policy.

If you have an excused absence with appropriate documentation, you will be permitted to make up coursework or complete an equivalent assignment agreed upon with me.
Late Submission Policy

A due date will accompany each individual/team assignment or each deliverable of the team project.

All course deadlines are listed in Eastern Time Zone.

Late submissions are NOT accepted without prior approval from the instructor. Late submission penalty may be applied.
Late Submission Policy

Except group presentations and final written report of the team project, everyone will be granted for a **ONE-TIME** waiver of late submission penalty - you will not be penalized if you submit your assignment in **three days after due date**. For team deliverables, you cannot use the waiver if any member in the team has used the waiver before.

Please notify me in advance, when you use this waiver.
Course Textbooks


Team Project

**Objective:** Design an alternative interface for a computer-based application, e.g., an app or a website

**Deliverables:**

- A written report of topic definition & understanding problem
- Design alternatives presentation
- Interim reports
- System prototype
- Final group presentation scheduled at the final exam time
- Final written report
Examples of Previous Projects

• Improving web design for Blackboard, Yelp, Domino’s Pizza, Craigslist, ...
• Improving a mobile game
• Designing apps
Team Assignment

~5-6 undergraduate or ~3 graduate in one team

Case 1:
• Assigned team members based on background and interests
• Each team may consist of people with different skills

Case 2: self-nominations
• Form your own team
• Send me an email by 11:59pm, Wednesday, Sep. 1
  • a list of team members
  • copy to all team members
First Individual Assignment

Write an essay about yourself (less than 400 words) and describe

• Your background
• Your major courses taken in CSE if any
• Your hobbies
• Why you want to take HCI and what goal you want to achieve
• Due in Blackboard: 11:59 pm EST, Friday, Aug 27
Paper Reading (Graduate Only)

- A literature review on a selected HCI research topic
- A proposal including
  - The topic
  - A brief background introduction
  - A list of papers (tentative) – you can add more papers later
  - Proposal due 11:59 pm EST, Friday, Sep. 10
- The full written report of literature review due 11:59 pm EST, Sunday, Nov. 14
Now, Let’s talk about HCI
What is Interaction Design

*Interaction Design* focuses on designing **interactive products** to support the way **people communicate and interact** in their everyday and working lives.

*Interaction Design: Beyond Human-Computer Interaction, by Rogers, Sharp, and Preece*
What is HCI?

**HCI** “concerned with the **design**, **evaluation**, and **implementation** of **interactive computing systems** for **human use**.” (ACM SIGCHI, 1992, p.6)

The field of HCI: some bits and pieces of its history by Agnieszka Szóstek
Why do You Think HCI Matters?

Examples of HCI

• Vending machines
• Kiosks
• Vehicle panels
• Computer games
• Websites of shopping, banking,
• Smartphones Apps
• And more
Why do You Think HCI Design Matters?

Why do you choose one product versus the other?
Why do You Think HCI Design Matters?

When you buy a new smartphone, what are your desired properties?

- **Usability** – easy to use
- **Functionality** – equip some key functions you want, e.g., high quality camera, fingerprint/face ID, large memory, fast processing speed
- **Aesthetics** – the color, shape, size, etc.
Why do You Think HCI Design Matters?

Why do you choose one streaming service versus the other?

• Usability – easy to search
• Content – more and new TV shows, movies
Why do You Think HCI Design Matters?

Why do you choose one computer game versus the other?

- Sensual appeal – engaged
- Emotional appeal – satisfied, excited
Why do You Think HCI Matters?

Why do you choose one product versus the other?

• Usability
• Functionality
• Aesthetics
• Content
• Sensual appeal
• Emotional appeal
Why do You Think HCI Matters?

• Good designs
  • What do you like

• Bad designs
  • What’s wrong with them
  • How can we improve them
Why do You Think HCI Matters?

Common features of good designs

• Easy to learn
• Effective to use
• Enjoyable user experience
  • Reduce negative aspects: frustration, annoyance, boredom
  • Improve positive aspects: enjoyment, engagement, etc.
HCI: Approach to Understanding a System

- **A system** is a collection of **entities** that interact to accomplish a **goal/task** which could not be obtained independently.

- System optimization of HCI should include all elements:
  - Hardware
  - Software
  - Humans
  - Environment
Human-Computer Interaction

- Investigate the entire system
  - Environment variables (e.g., context)
  - Person variables (e.g., physical, sensory, cognitive)
  - Technology variables (e.g., software/hardware)

- Propose user-friendly design

- **Question:** How do we know if a design is “user friendly”?