

Course Administration

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Overview

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Administration

- Course materials at Google Drive or <http://www.chaklam.com>
- TEAL Moodle Classroom
- Email: chaklam@ait.asia
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Why and what HCI

- HCI is **pervasive** and **multi-disciplinary**
 - User Interface
 - Input Devices: Mouse, Keyboard, Stylus, etc.
 - Applications
- Key goals
 - Reliability → Productivity → Creativity
→ Engagement → **Well-Being**
- Research Areas
 - User Experience and Usability
 - Education, Health, Aging, Gamification, LLM
 - Interaction - VR, AR, Haptics, Pen, Eye, Voice, Gesture, Textiles, Brain, etc.
 - Understanding Human Factors
- Research Questions
 - What are some **new** forms of interaction?
 - How to design **usable** devices?
 - What **human psychology** we need to consider?
 - How to **scientifically evaluate**?

Flagship venues

- ACM Conference on Human Factors in Computing Systems (ACM CHI)
- 5,000+ submissions and 5,000+ attendees
- Ideas about Apple Watch, iPhone, VR, AR etc. all originates from here 10+ years ago
- https://www.youtube.com/watch?v=4_AmTl1vraI

Outline

- Wk 1: History of HCI
 - Vannevar Bush's "as we may think" - Invention of the mouse - Xerox Star - Macintosh - SIGCHI conference
- Wk 2-4: Experimental Design
 - IV vs. DV
 - Within-subject vs. Between-subject
 - Control vs. Confounding vs. Random variables
 - Task and Procedure, Order Effects, Validity Analysis
- Wk 5-6: Design of Everyday Things
 - Why Design is Difficult
 - Design Principles
 - Design Theory
- Wk 7: **Midterm Exam**

Outline

- Wk 8: Human Factors
 - Perception, attention, memory, reasoning
- Wk 9 10: Human-Centered LLM
- Wk 11: Analysis of Variances
- Wk 12: Interaction
- Wk 13 14: No Class; Project Time
- **Wk 15: Project Phase 3: Evaluation and Communication**
- **Wk 16: Final Exam**

Project

- Groups of 4-5 people
- Main objective: Successfully (a) design a system, (b) create a digital prototype, and (c) simulate controlled experiment(s) with clear IV and DV.
- Topics: **Human-Centered LLM** or **Human-AI collaboration**
- **Research and Idea Phase**
 - Review 16-20 papers in CHI / ACL in the past 2 years (*choose only experimental type of papers with clear IV and DV*)
 - Summarize the current research state based on the review
 - Identify a gap of the current research state
 - Identify a research question/problem
 - Identify several new research directions you wanna do
 - **Submission (Week 9):**
 - INTRODUCTION, RELATED WORK section of the report (must either use the SIGCHI / ACL format)
 - PPT presentation

Project

- **Design and Prototyping Phase**

- Develop your prototype. Be creative. Use existing mockup tools.
- **Submission (Week 13):**
 - SYSTEM section of the report
 - PPT presentation
 - 1-2 min tiktok video

- **Evaluation and Communication Phase**

- Simulate controlled experiment with at least 15 participants. Run statistical analysis on the data.
- **Submission (Week 15):**
 - EXPERIMENT, RESULTS, DISCUSSION and CONCLUSION section of the report
 - PPT presentation
 - 1-2 min tiktok video

Project

- Examples of each phase can be found in the Google Drive.
- You are responsible to take note of all deadlines and plan accordingly.

Take home task

Details on Moodle TEAL

- Phase 0: ACM CHI Video Previews (submit as individual)
 - Explore HCI ideas on the ACM CHI Youtube channel
 - Prep for project
- Phase 0: Team Forming (submit as group)
 - Send your topics, member list, etc.

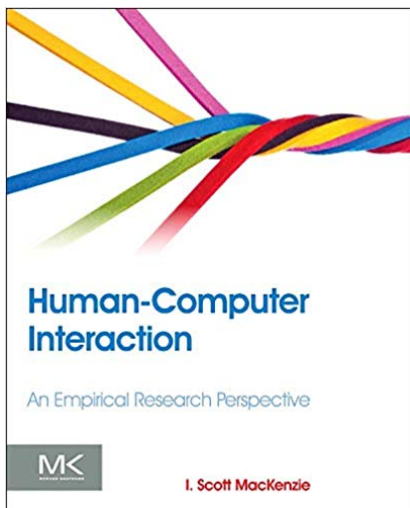
Grading Criteria

| Rubric | Percentage |
|---------------------------------------|------------|
| Midterm | 20 |
| Final | 35 |
| Project: Phase 0 | 5 |
| Project: Research and Idea | 10 |
| Project: Design and Prototyping | 15 |
| Project: Evaluation and Communication | 15 |

Table: Grading criteria

Please see the detailed criteria at GDrive for how each phase are being graded. My website also contains research tips on how to conduct HCI research so it may prove to be useful.

Main Textbook



Human Computer Interaction: An Empirical Research Perspective by I. Scott Mackenzie, 1st ed. (2013)

Supplementary Textbooks

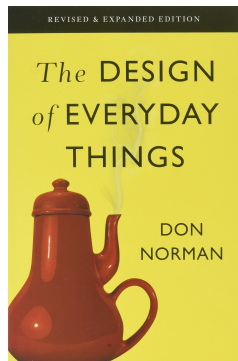


Figure: The Design of Everyday Things by Norman, Revised and Expanded ed. (2013)

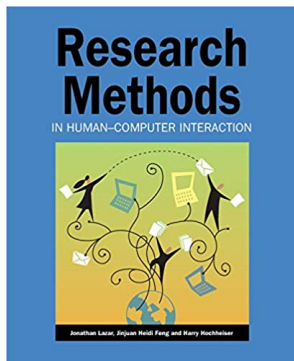


Figure: Research Methods in Human-Computer Interaction by Lazar, 1st ed. (2010)

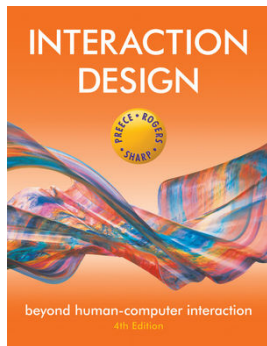


Figure: Interaction Design: Beyond Human Computer Interaction by Preece, Sharp and Rogers, 4th ed. (2015)

Supplementary Textbooks



Figure: Don't Make Me Think by Krug, 2nd ed. (2006)

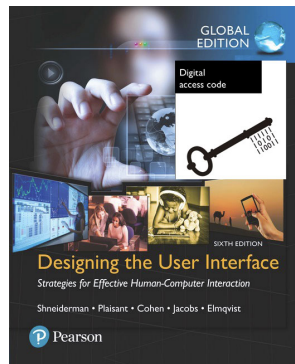


Figure: Designing the User Interface by Shneiderman et al., 6th ed. (2016)

Coming Next

- Mackenzie, Chapter 1, **History Context**, Human Computer Interaction: An Empirical Research Perspective, 1st ed. (2013)
- Shneiderman, **Direct Manipulation: A Step Beyond Programming Languages** (1983)
- Macintosh 128K,
https://en.wikipedia.org/wiki/Macintosh_128K

Questions