Course Introduction

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Overview

Downloads and Contact Info

- Course materials can be found at the Google Drive link or if you forget the link, you can simply find it at `chaklam.com`
- You have to join Google Classroom (Code: 6oxmpq0) to view and submit the assignments
- Contact me anytime via email chaklam@ait.asia
- Available on Tuesday 8-16h. Appointment by calendar invite to chaklam@ait.asia

Pre-requisities

- Coding (Software and Hardware)
  - Although HCI is mostly conceptual, one would need to **code** and **get your hand dirty** to prove your concepts (at least if you want someone to believe your idea). However, HCI is mostly flexible in technical requirements, and you are your own boss on calibrating how concrete and rich you want your prototype to be.
- Basic design skills
  - Skills in Photoshop, Illustrators, Adobe XD, Video Editing, etc. would be required to create prototype. Although how good your project is still largely depends on the idea and implementation, **good art is always welcomed**.
- Basic communication and writing skills
  - *"If a tree falls in a forest and there is no one to hear it"* - A good design is only good if it is motivated effectively. Thus it is important that you have basic skills in **persuasion** and **arguments** in why you HCI solution is useful.

Course Outline

- Week 1: History of HCI
  - Vannevar Bush's "as we may think" - Invention of the mouse - Xerox Star - Macintosh - SIGCHI conference
- Week 2-3: Design of Everyday Things
  - Design Principles
  - Gulf of Execution and Evaluation
  - Design Thinking - Observation and Ideation, Prototyping, Iteration, Evaluation and Communication
- Week 4-5: Human Factors - perception, attention, memory, reasoning
- Week 6-7: Experimental Design
  - IV vs. DV
  - Within-subject vs. Between-subject
  - Control vs. Confounding vs. Random variables
  - Task and Procedure, Order Effects, Validity Analysis

Course Outline

- Week 8-9: Analysis of Variances
- **Week 10: Project Progress 1: Research and Idea**
- Week 11: Interaction Elements
  - Control-display gain
  - Latency
  - Modes
  - Degrees of Freedom
- Week 12,14: Modeling Interaction
  - Fitts' law, Hick-Hyman Law, Keystroke-level model
- **Week 13: Project Progress 2: Prototype**
- Week 15: HCI Research Trends
- **Week 16: Final Project: Evaluation and Communication**

Project

- Perform HCI research on your proposed solution
- Groups of 4-5 people
- Final output: 4-10 pages SIGCHI formatted paper.
- Three phase: Research and Idea, Prototype, and Evaluation and Communication
- **Research and Idea Phase**
  - Review around 16-20 related papers in CHI/UIST in the past 2 years, in one particular subfield
  - Summarize the current research state based on the review
  - Identify a gap of the current research state
  - Identify a research question/problem
  - Identify multiple alternative solutions
  - **Submission (Week 10)**:
    - INTRODUCTION, RELATED WORK section of the report (it must use the SIGCHI format)
    - PPT presentation

Project

- **Prototype Phase**
  - Develop a *working* prototype (sufficient for evaluation)
  - Make a 1-min promotional video
  - **Submission (Week 13)**:
    - DESIGN section of the report (it must use the SIGCHI format)
    - PPT of your midterm progress
    - 1-min promotional video (youtube link or similar)
- **Evaluation and Communication Phase**
  - Perform empirical evaluation with at least 12 participants
  - **Submission (Week 16 - Final Progress)**:
    - METHOD, RESULTS, DISCUSSION and CONCLUSION section of the report (it must use the SIGCHI format)
    - PPT of your final progress

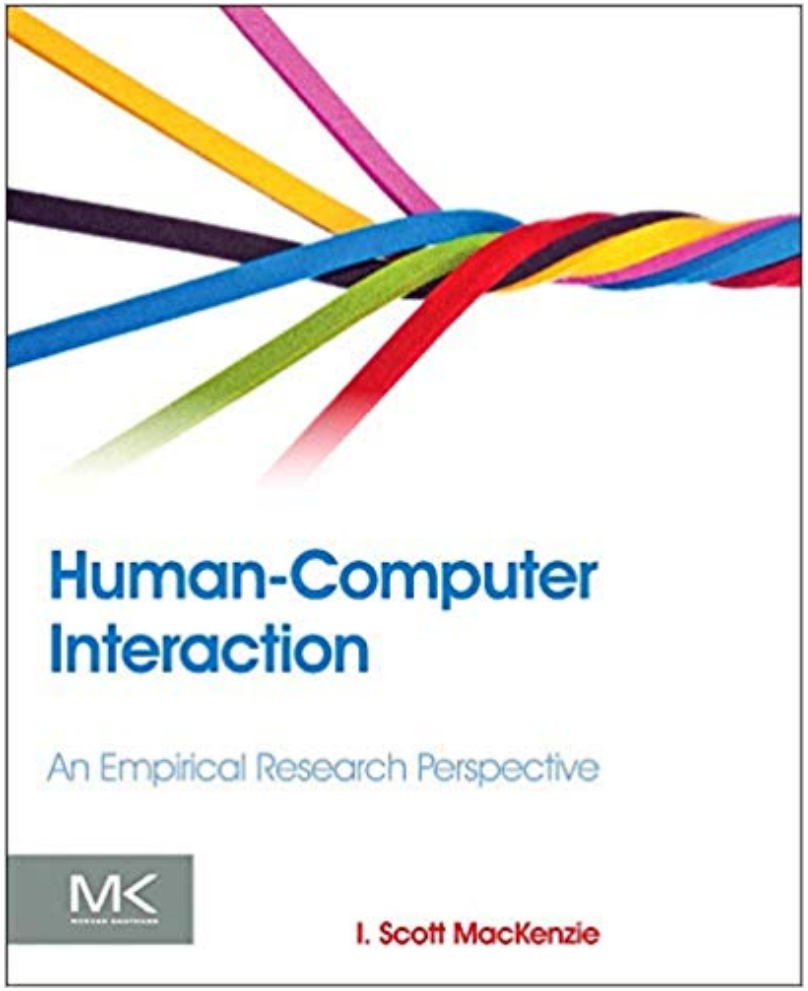
Grading Criteria

Rubric	**Percentage**
Assignments	30
Research and Idea Phase	20
Prototype Phase	30
Evaluation and Communication Phase	20

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

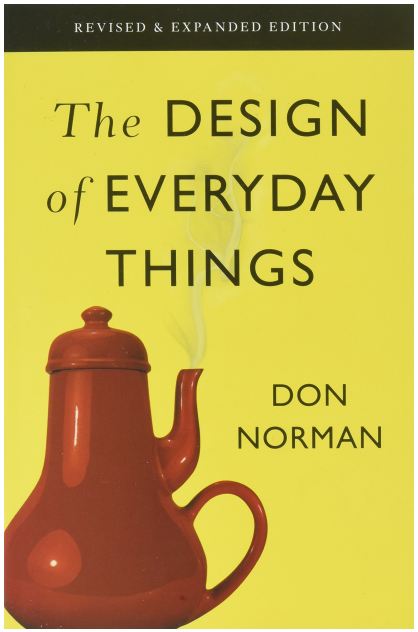


Figure: The Design of Everyday Things by Norman, Revised and Expanded ed. (2013)

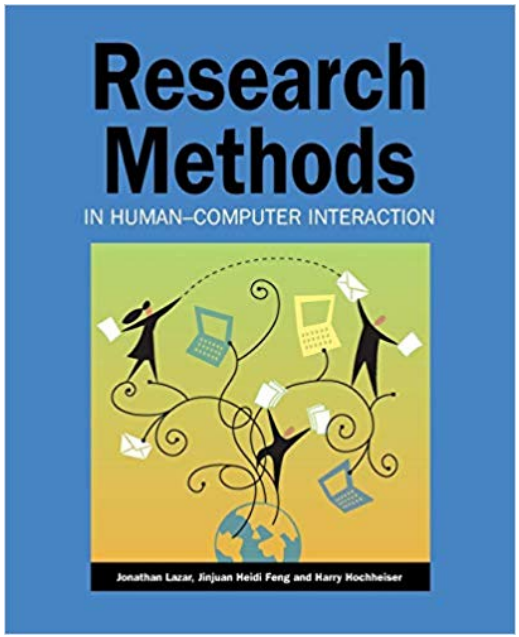


Figure: Research Methods in Human-Computer Interaction by Lazar, 1st ed. (2010)

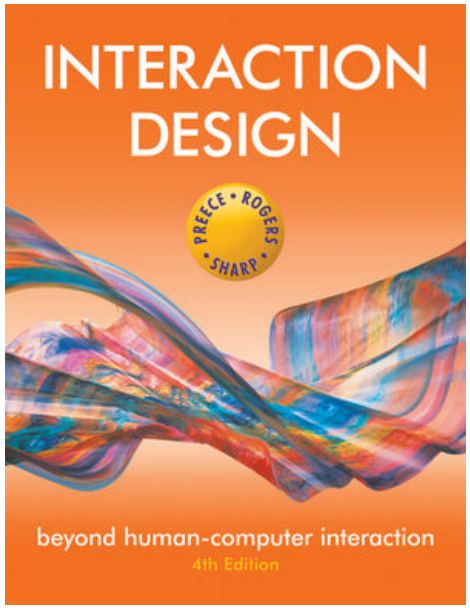


Figure: Interaction Design: Beyond Human Computer Interaction by Preece, Sharp and Rogers, 4th ed. (2015)

Supplementary Textbooks

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

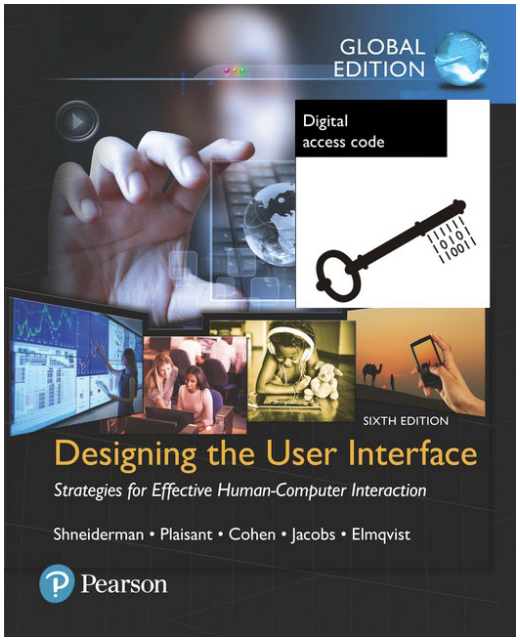


Figure: Designing the User Interface by Shneiderman et al., 6th ed. (2016)

Readings For Next Week

- 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