

Introduction to COMP4461:

Human-Computer Interaction



Xiaojuan Ma

Spring 2023



About this Course

- Instructor

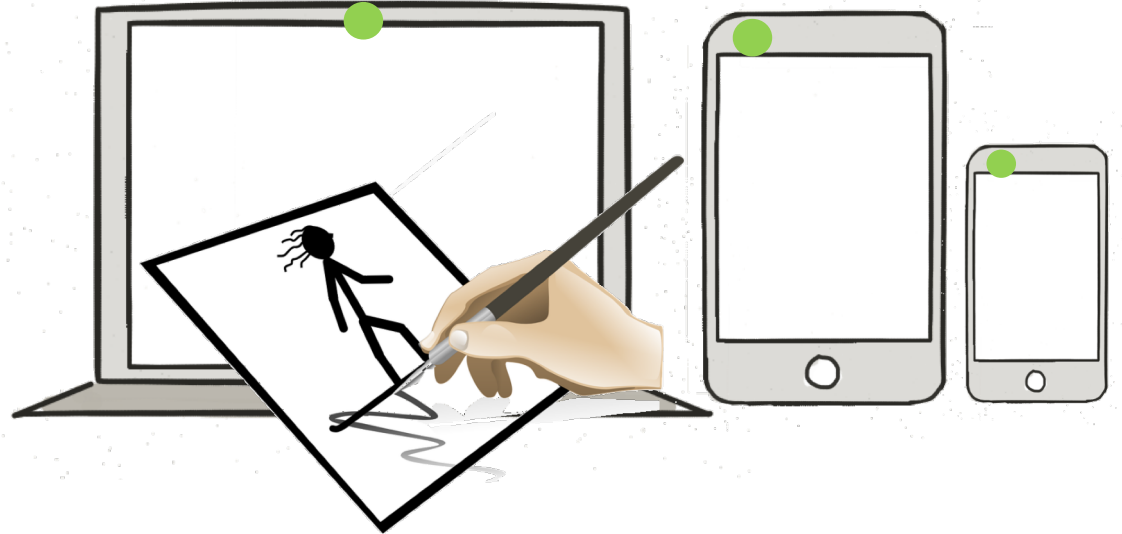
- Xiaojuan Ma
- Email: mxj@cse.ust.hk
- Office: RM3507

- TA

- Chuhan Shi (cshiag@connect.ust.hk)
- Dingdong Liu (dliuak@connect.ust.hk)
- Office hour: Mon 3:00 - 3:50pm (lab time by appointment)

- Time and Location (online, Zoom link on canvas)

- Lecture: Mon Wed 10:30am – 11:50am, Rm2502 (Lift25-26)
- Lab: 2~3 lab sessions (to be announced by TA)





Course Website and Space

- Course website:

<https://home.cse.ust.hk/~mxj/page/COMP4461-202302.html>

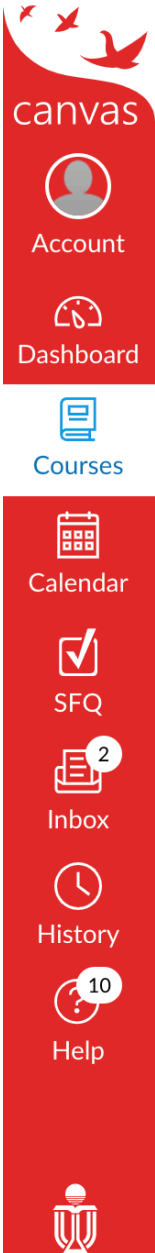
<https://canvas.ust.hk/courses/47780>

- Team Link: <https://comp4461.slack.com/>

- We will use  **slack** for course communication

- Make course announcement
- Publish course materials
- Submit assignments
- Public discussion
- Private message

- Give me an email address and I will invite you
 - My Slack Team ID is **xm**



2022-23 SPRING

COMP4461 (L1) - Human-Computer Interaction



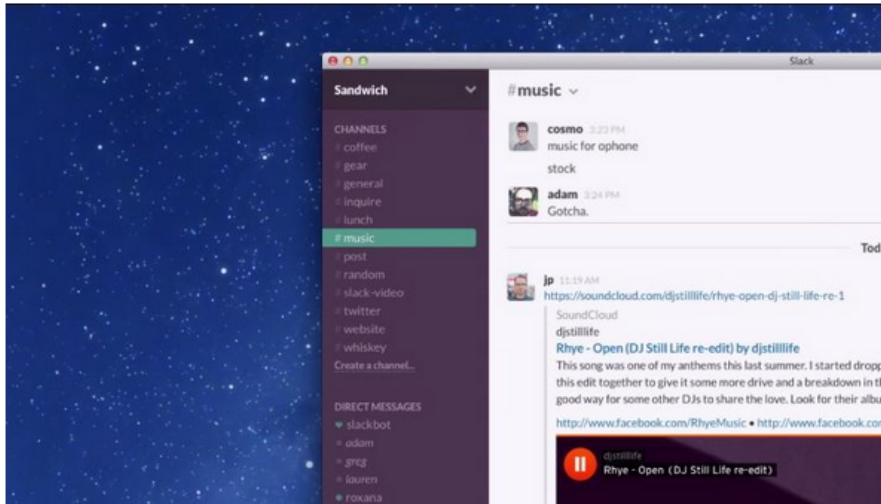
- Home
- Announcements
- Assignments
- Discussions
- Grades
- People
- Pages
- Files
- Syllabus
- Outcomes
- Quizzes
- Modules
- BigBlueButton
- Collaborations
- More Tools
- Google Drive
- Office 365

Link to <[Course Page](#)> and <[Join Slack](#)>. Link to <[Lecture Notes](#)>

Lecture	Date	Topic	Presenter	Note
1	Mon Feb 6	Introduction to COMP4461 and to HCI	Xiaojuan Ma	P1.0 Topic release
2	Wed Feb 8	Fundamental: Human-Centric Design	Xiaojuan Ma	
3	Mon Feb 13	Fundamental: Understanding Humans I	Xiaojuan Ma	
4	Wed Feb 15	Fundamental: Understanding Humans II	Xiaojuan Ma	
5	Mon Feb 20	Design: Empathize	Xiaojuan Ma	
6	Wed Feb 22	Design: Ideate	Xiaojuan Ma	
7	Mon Feb 27	Topic: Multimodal Interaction	Xiaojuan Ma	
8	Wed Mar 1	Project: P1 Design Pitching	Class	P1.1 P1 prototype submission; P1.2 Peer evaluation; P1.3 P1 personal diary submission
9	Mon Mar 6	Topic: Human-Robot Interaction (HRI)	Xiaojuan Ma	P2.0 Topic release
10	Wed Mar 8	Design: Prototyping	Xiaojuan Ma	
11	Mon Mar 13	Topic: Ubiquitous Computing	Xiaojuan Ma	Mon 3:00pm Robot Programming Lab (by TA)
12	Wed Mar 15	Evaluation: Preparation and Questionnaire	Xiaojuan Ma	Final Video Paper Topic release
13	Mon Mar 20	Topic: Extended Reality	Xiaojuan Ma	Mon 3:00pm Chatbot Programming Lab (by TA)
14	Wed Mar 22	Evaluation: Heuristic Testing	Xiaojuan Ma	
15	Mon Mar 27	Topic: CSCW and Social Computing	Xiaojuan Ma	
16	Wed Mar 29	Evaluation: Usability Testing	Xiaojuan Ma	P3.0 Topic release; Tue 9:00am VR Programming Lab (by TA)
17	Mon Apr 3	Project: P2 Demonstration	Class	P2.1 P2 prototype submission; P2.2 Peer evaluation; P2.3 P2 personal diary submission
18	Wed Apr 12	Evaluation: Result Analysis	Xiaojuan Ma	
19	Mon Apr 17	Topic: Computing for Good	Xiaojuan Ma	
20	Wed Apr 19	Mid-term Exercise	Class	
21	Mon Apr 24	Final Video Paper Showcase I	Class	Video Paper Submission by 8pm on Sunday, Apr 23
22	Wed Apr 26	Final Video Paper Showcase II	Class	
23	Wed May 3	HCI: From Lab to the Real World	Xiaojuan	
24	Mon May 8	Project: P3 Presentation	Class	P3.2 P3 Peer Evaluation; P3.3 P3 Personal Diary Submission

OCT 31, 2014 @ 9:00 PM 8,167 VIEWS

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TRENDING



Course Learning Outcomes

- **Knowledge/Content Related:**
- **Course ILO #1:** Understanding the basic concepts and methods in HCI research
- **Course ILO #2:** Understanding the foundations and trends of HCI applications

- **Academic Skills/Competencies:**
- **Course ILO #3:** Design an interactive system using various methods through different design activities
- **Course ILO #4:** Prototype an interactive system with assorted digital and physical tools
- **Course ILO #5:** Evaluate an interactive system through user studies

- **Other Learning Outcomes:**
- **Course ILO #6:** Communicate effectively with target users and different stakeholders in academia and industry



Grading Scheme

- **Experiential Learning**
- Three group projects **55%**
 - Project 1 15%
 - Project 2 20%
 - Project 3 20%
- Midterm Exercise: **20%**
- Video Paper: **15%**
- Participation + Bonus: **10%**



Personal Portfolio Page

- Create a personal portfolio page to host your personal HCI project diaries
 - May use free website builders e.g., wix.com
- Examples:
 - <http://harkmylord.com/>
 - <http://simonpan.com/>
 - <http://www.garyjanderson.com/index.html>
- TA will provide some tips on how to set up your own page online



(1) Projects 55%

- **P1: “If ___ on campus were more user-friendly...” 15%**
 - Identify a software, an equipment, a service, ... on campus that the HKUST community wish to be more user-friendly 5%
 - Needfinding: empathize with user needs
 - Ideation: potential problems with existing entity 5%
 - Document the ideation process via Mindmap
 - Present the storyboards for possible ideas
 - Group presentation and personal diary on portfolio 5%
 - Present: in-class project presentation (Mar 1)
 - Personal reflection on the experiences and lessons
 - Text, pictures, diagrams, video, etc.



(1) Projects 55% (cont.)

- **P2: HRI for Wellbeing** **20%**
 - Identify a user scenario that needs HRI service 5%
 - Needfinding: identify the potential need(s) people have to manage physical/mental health as well as a healthy lifestyle
 - Design an interactive agent/chatbot prototype 10%
 - Development: build an agent/chatbot to meet the proposed need
 - Evaluation: conduct usability testing
 - Bonus given to working prototypes
 - Group presentation and personal diary on portfolio 5%
 - Present: in-class project presentation (April 3)
 - Personal reflection on the experiences and lessons
 - Text, pictures, diagrams, video, etc.
 - Lab 1&2: voice assistant and chatbot programming tutorial (in lab on Mon 3pm March 13 & 20)



(1) Projects 55% (cont.)

- **P3: Social XR for “Lifelong Learning”** **20%**
 - Identify a user scenario for lifelong learning **5%**
 - Empathize: people want to learn anytime and anywhere, inside or outside of the classroom through out their lives (<https://uil.unesco.org/>)
 - Needfinding: pros & cons of existing solutions and suitability of XR
 - Design an interactive demo **10%**
 - Development: show features for an envisioned future
 - Evaluation: conduct a qualitative user evaluation
 - Bonus given to working prototypes
 - Group presentation and personal diary on portfolio **5%**
 - Present: in-class project presentation (May 8)
 - Personal reflection on the experiences and lessons
 - Text, pictures, diagrams, video, etc.
 - Lab 3: VR/AR programming (in lab Mon 3pm March 27)



Notes on Group Projects

- Group Assignment
 - **Vote**: work with same teammates vs. new team per project
 - Switch roles (work assignment) for each project
 - Skills + constraints (e.g., timezone): self-organization first
- Late Policy
 - Up to 3 days in total
 - Available only by request in advance through email or private message on Slack to the TA; No credit otherwise
- Grading
 - Group work: proportional to individual efforts
 - Personal diary: emphasis on personalized reflections



(2) Midterm Exercise 20%

- In-class Midterm Exercise
 - Wednesday, April 19
- 4~5 Questions (80min)
 - Problem-solving questions
 - Design questions
- Open Book
 - Textbook and printed lecture notes only
 - Specified computing device and tools



(3) Final Video Paper 15%

- Theme “Recovery and Revival of Hong Kong Culture in Post-Pandemic Era”
 - Sustainable development of HK culture: language, food, art, tradition, heritage, etc.
 - <https://unesdoc.unesco.org/ark:/48223/pf0000381524.locale=en>
- Length: 2~5 min
- Video Showcase
 - Final Screening on April 24 and 26
 - Audience’s Choice
 - Best video
 - Most educational video (intellectually and/or socially)
 - Most innovation video (concept and/or application)
 - Most entertaining video (story and/or presentation)



(4) Participation + Bonus 10%

- Attendance + Activeness
 - In-class exercises + peer review participation
 - Additional bonus awarded to excellent work in each project or activity
- Note
 - Bring a pen/pencil and a deck of paper



Course Learning Outcome

- Lecture, Projects, Midterm
 - Understand the basic concepts and methods in HCI
 - Understand the foundations and trends of HCI applications
- Lecture, Projects
 - Learn to identify user needs, abilities, and constraints
 - Learn to design, prototype, and evaluate HCI technologies
- Lecture, Projects, (Midterm)
 - Analyze potential social impact and responsibilities as well as possible ethical, legal, security and privacy issues
- Projects and Participation
 - Communicate effectively with target users and different stakeholders in academia and industry

Course Learning Outcome	Exemplary	Competent	Needs Work	Unsatisfactory
Understanding the basic concepts and methods in HCI research	Define and clarify the basic HCI concepts and methodologies, and provide proper examples for demonstration	Define and clarify the basic HCI concepts and methodologies.	Define the basic terminologies and methodologies in HCI research, have difficulty in clarifying the details, conditions, and contexts.	Have difficulty in explaining the basic concepts and processes of common design / prototyping / evaluation methods in HCI research
Understanding the foundations and trends of HCI applications	Elicit the history of HCI applications, the key changes, and driving forces, clarify the major challenges and future directions	Elicit the history of HCI applications, and explain the key changes and driving forces	Elicit the history of HCI applications, have difficulty in explaining the key changes and driving forces	Have difficulty in identifying the core values, scopes, challenges, and trends in HCI applications
Design an interactive system using various methods through different design activities	Conduct common design activities such as needfinding, make good use of design tools such as mindmap, and generate clear design insights	Conduct common design activities such as needfinding and make good use of design tools such as mindmap	Conduct common design activities such as needfinding and brainstorming, have difficulty in using design tools such as mindmap	Have difficulty in conducting common activities such as needfinding and brainstorming in design process to generate design ideas

Prototype an interactive system with assorted digital and physical tools	Conduct common prototyping activities, make good use of various prototyping tools, and generate prototypes at different fidelities	Conduct common prototyping activities and make good use of various prototyping tools	Conduct common prototyping activities, have difficulty in using various prototyping tools	Have difficulty in conducting common prototyping activities and using various prototyping tools
Evaluate an interactive system through user studies	Design and conduct user studies and data analysis, make good use of various prototyping tools, and generate good design implications	Design and conduct user studies and data analysis, and make good use of various prototyping tools	Design and conduct user study and data analysis, have difficulty in using various evaluation tools	Have difficulty in designing user studies and conducting data analysis
An ability to communicate effectively with target users and different stakeholders in academia and industry	Explain HCI designs / applications to a general audience and handle questions, and make good use of multimedia	Explain HCI designs / applications to a general audience and handle questions	Explain HCI designs / applications to a general audience, have difficulty in handling questions	Have difficulty in explaining HCI designs / applications to a general audience



Text Book (Required)

- Hartson, Rex, and Pardha S. Pyla. *The UX Book: Process and guidelines for ensuring a quality user experience*. Elsevier, 2012. ISBN-13: 978-0123852410, ISBN-10: 0123852412

<http://www.theuxbook.net/>

- Yvonne Rogers, Heken Sharp, & Jenny Preece. *Interaction Design: Beyond Human-Computer Interaction* (3rd Edition). John Wiley & Sons, Inc, 2011. ISBN 0-470-66576-9, 978-0-470-66576-3.

<http://www.id-book.com/>

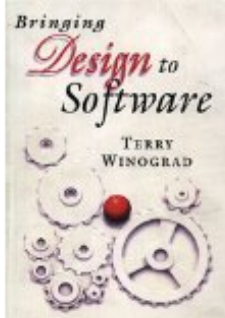
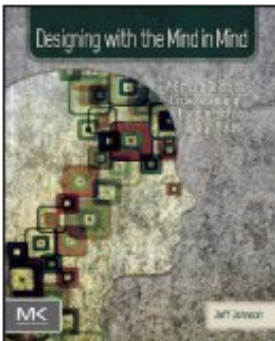
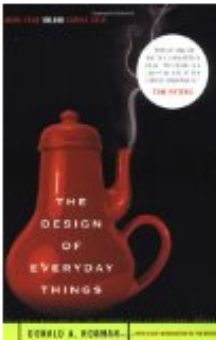
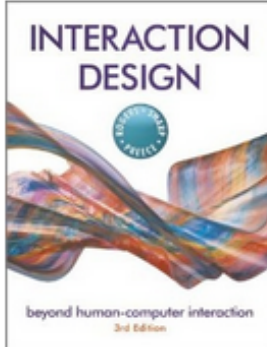
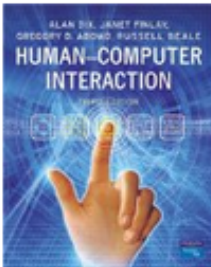


Reference Book (Optional)

- Lazar, Jonathan, Jinjuan Heidi Feng, and Harry Hochheiser. *Research methods in human-computer interaction*. Morgan Kaufmann, 2017. eBook ISBN: 9780128093436, Paperback ISBN: 9780128053904
<https://www.elsevier.com/books/research-methods-in-human-computer-interaction/lazar/978-0-12-805390-4>
- Alan Dix, Janet Finlay, Gregory Abowd & Russell Beale. *Human-Computer Interaction* (3rd Edition). Prentice Hall, 2004. ISBN 0-13-046109-1.
<http://hcibook.com/e4/>

“Stay hungry. Stay foolish.”

- By Steve Jobs



Google search results for "third wave HCI".

Scholar About 25,500 results (0.05 sec)

Articles

- When second wave HCI meets third wave challenges S.Barzilai - Proceedings of the 4th Nordic conference on Human ... 2006 - dl.acm.org
Abstract: This paper reviews the current status of second generation HCI theory, faced with the challenges brought to HCI by the so-called third wave. In the third wave, the user context and application types are broadened, and reoriented, relative to the focus of the second ...
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- Pleasure is your brightest: digitally enabled designer sex toys as a case of third-wave HCI J.Barzilai, S.Barzilai - Proceedings of the SIGCHI conference on Human ... 2011 - dl.acm.org
Abstract: In the past decade, HCI has become increasingly preoccupied with the dreary subjective qualities of interaction: experience, embodiment, pleasure, intrusivity, and so on, an agenda sometimes grouped under the heading of "Bild-wave HCI." Analytically ...
Cited by 19 Related articles All 2 versions Cite Save More
- Sustainable HCI meets third wave HCI: 4 themes P.Stogias, K.Boehrer, U.Schoof - CHI 2009 workshop, 2009 - zeitkunst.org
It is widely acknowledged by scientists and, increasingly, the broader public that our way of living is leading to serious environmental problems. Engineers have recognized the necessity to consider environmental sustainability in technology design, leading to the ...
Cited by 7 Related articles Cite Save More
- Feminist HCI taking stock and outlining an agenda for design S.Barzilai - Proceedings of the SIGCHI Conference on Human ... 2010 - dl.acm.org
... Feminist Epistemologies: The transition to Bild-wave HCI [16-45] represents not only a turn to a different sort of computing, but also to new epistemologies better suited to our changing design practice needs. Thus we have the ...
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- New Journal: ACM Transactions on Interactive Intelligent Systems
ACM Transactions on Interactive Intelligent Systems (TIIIS) publishes research on the design, realization, or evaluation of interactive systems that incorporate some form of machine intelligence. Applications include user interface technologies, recommender systems and information retrieval, automatic learning, testing, human-computer interaction, semantic techniques, gaming and mobile and ubiquitous computing. See the full list of journals in the ACM Library.

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- Happy Friday, friends, and welcome to another episode of TCBC, TechCrunch's mostly-weekly podcast on all things Bitcoin. This week John Blythe was in San Francisco, so we recorded the audio in the studio. Here's hoping it's better than usual. This week we dug into the exit of LocalBitcoins from New York state, the 8 megabyte block size, and something ...

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- The first secret of design is ... noticing
Posted Jul 2015 Rated Informative, Informative
- The simple biggest reason why startups succeed
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Learning Aims



Conscious



Critical



Creative



Questions?

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