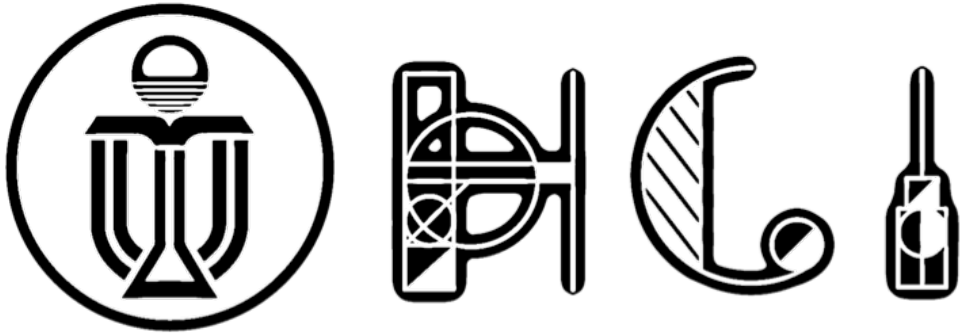
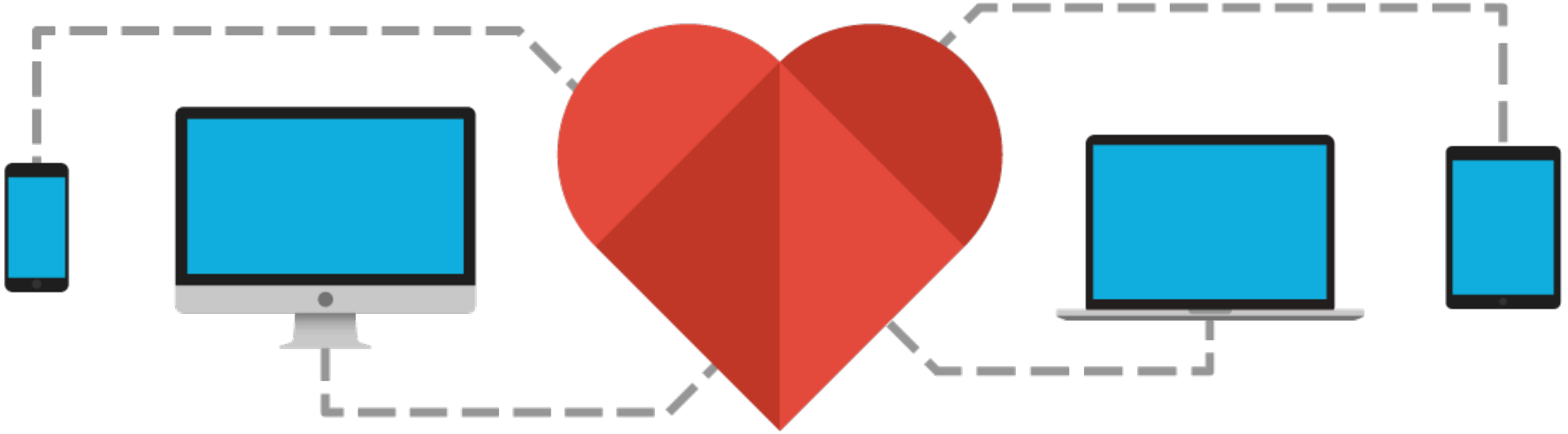


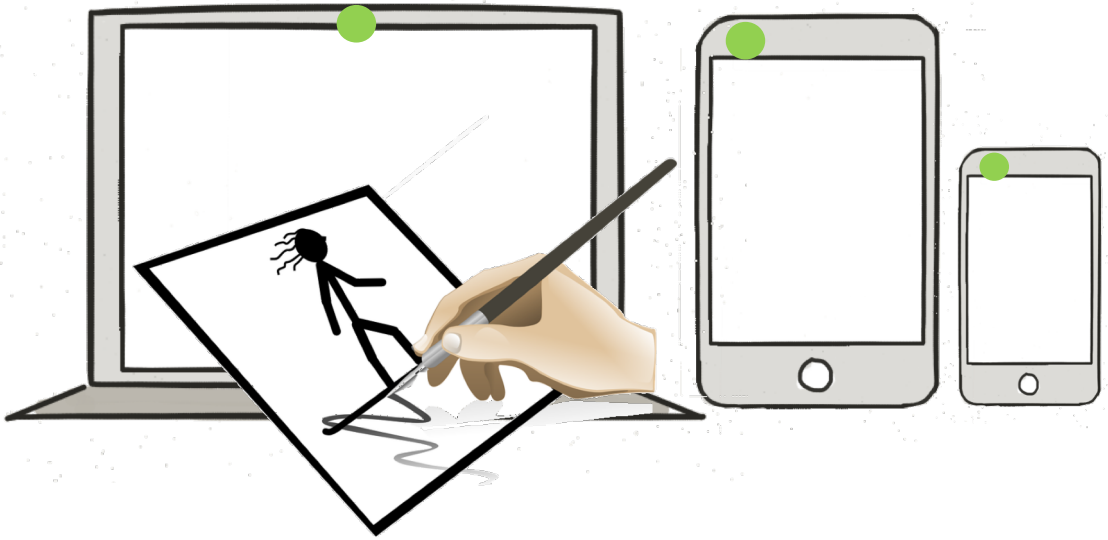
Introduction to COMP4461:

Human-Computer Interaction



Xiaojuan Ma Spring 2022

About this Course



- Instructor
  - Xiaojuan Ma
  - Email: mxj@cse.ust.hk
  - Office: RM3507
- TA
  - Qingyu Guo (qguoag@connect.ust.hk)
  - Chengbo Zheng (czhengag@connect.ust.hk)
  - Office hour: Thu 9:00 - 9:50AM (lab time by appointment)
- Time and Location (online, Zoom link on canvas)
  - Lecture: Mon 1:30pm – 2:50pm, Fri 9:00am – 10:20am
  - Lab: 3 lab sessions (see course syllabus: by TA)

Course Website and Space

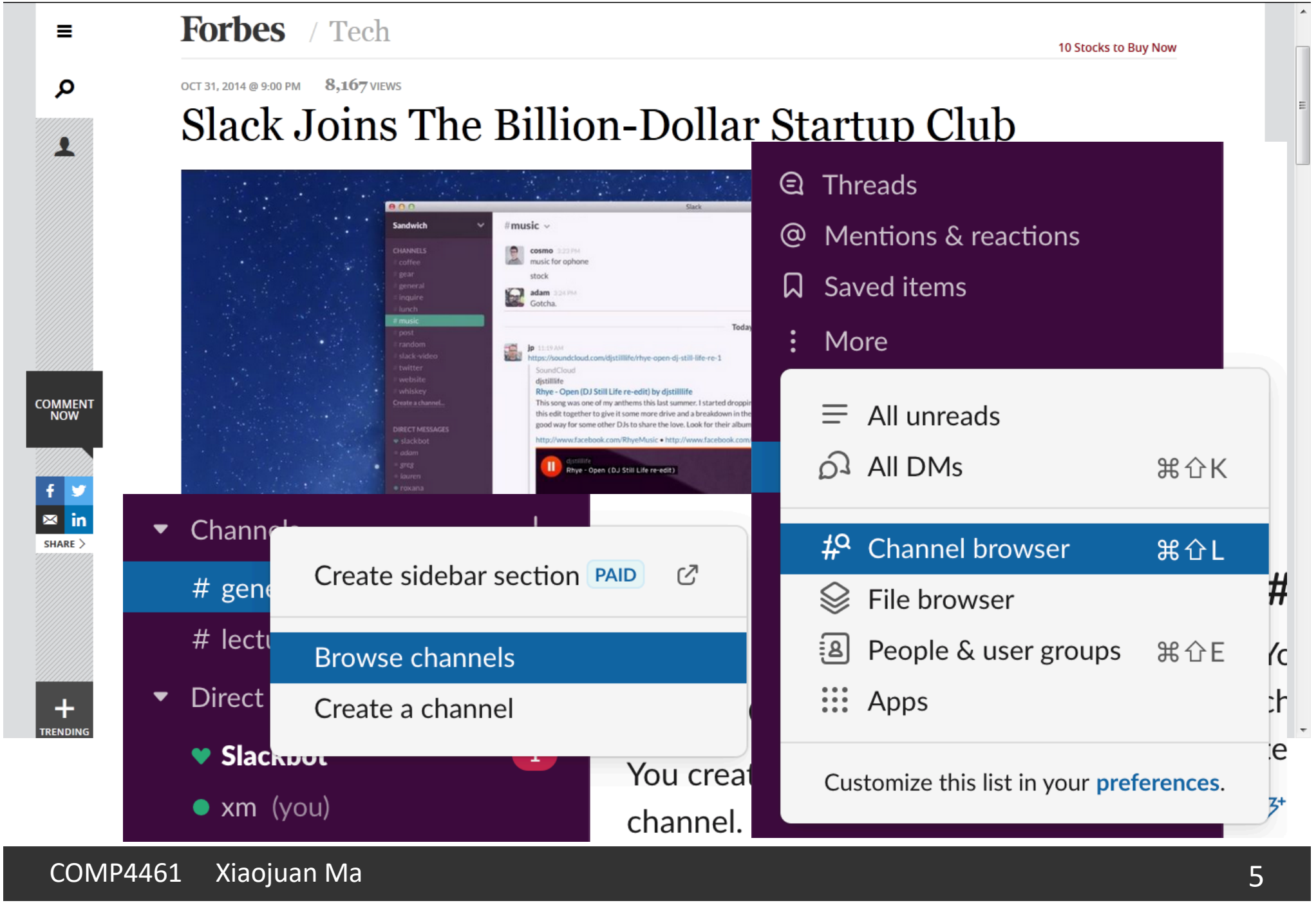
- Course website:
  http://home.cse.ust.hk/~mxj/page/COMP4461-202202.html
  https://canvas.ust.hk/courses/42356
- Team Link: https://comp4461.slack.com/
- We will use slack for course communication
  - Make course announcement
  - Publish course materials
  - Submit assignments
  - Public discussion
  - Private message
- Give me an email address and I will invite you
  - My Slack Team ID is **xm**

COMP4461 (L1) - Human-Computer Interaction Syllabus

Link to <Course Page > and <Join Slack >

Lecture	Date	Topic	Presenter	Note
1	Fri Feb 4	Introduction to COMP4461 and to HCI	Xiaojuan Ma	P1.0 Topic release
2	Mon Feb 7	Fundamental: Human-Centric Design	Xiaojuan Ma	
3	Fri Feb 11	Fundamental: Understanding Humans I	Xiaojuan Ma	
4	Mon Feb 14	Fundamental: Understanding Humans II	Xiaojuan Ma	
5	Fri Feb 18	Design: Empathize	Xiaojuan Ma	Submission of "The Good, the bad, the ____" photo contest by 11:59pm on Feb 18
6	Mon Feb 21	Design: Ideate	Xiaojuan Ma	
7	Fri Feb 25	Topic: Multimodal Interaction	Xiaojuan Ma	
8	Mon Feb 28	Project: P1 Design Pitching	Class	P1.1 P1 prototype submission; P1.2 Peer evaluation; P1.3 P1 personal diary submission
9	Fri Mar 4	Topic: Human-Robot Interaction (HRI)	Xiaojuan Ma	P2.0 Topic release
10	Mon Mar 7	Design: Prototyping	Xiaojuan Ma	P3.0 Topic release; Final Video Paper Topic release
11	Fri Mar 11	Topic: Ubiquitous Computing	Xiaojuan Ma	Thu 9:00am Robot Programming Lab (by TA)
12	Mon Mar 14	Evaluation: Preparation and Questionnaire	Xiaojuan Ma	
13	Fri Mar 18	Topic: CSCW and Social Computing	Xiaojuan Ma	Thu 9:00am Chatbot Programming Lab (by TA)
14	Mon Mar 21	Evaluation: Heuristic Testing	Xiaojuan Ma	
15	Fri Mar 25	Topic: Virtual / Augmented Reality	Xiaojuan Ma	Thu 9:00am VR Programming Lab (by TA)
16	Mon Mar 28	Evaluation: Usability Testing	Xiaojuan Ma	
17	Fri Apr 1	Project: P2 Demonstration	Class	P2.1 P2 prototype submission; P2.2 Peer evaluation; P2.3 P2 personal diary submission
18	Mon Apr 4	Evaluation: Result Analysis	Xiaojuan Ma	
19	Fri Apr 8	Topic: Computing for Good	Xiaojuan Ma	
20	Mon Apr 11	Mid-term Exercise	Class	
21	Fri Apr 22	HCI: From Lab to the Real World	Xiaojuan Ma	Video Paper Submission by 8pm on Sunday, Apr 24
22	Mon Apr 25	Final Video Paper Showcase I	Class	
23	Fri Apr 29	Final Video Paper Showcase II	Class	
24	Fri May 6	Project: P3 Presentation	Class	P3.2 P3 Peer Evaluation; P3.3 P3 Personal Diary Submission

Course Introduction, outcomes, grading schemes, assessment rubrics, and references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10 Stocks to Buy Now
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All unreads
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Channel browser ⌘⇧L
File browser
People & user groups ⌘⇧E
Apps
Customize this list in your preferences.
Create sidebar section PAID
Browse channels
Create a channel
Direct
Slackbot
xm (you)
You creat
channel.

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 intelligent…” 15%**
  - Identify an object, an equipment, a facility, … on campus that the HKUST community wish to be (more) intelligent 5%
    - Needfinding: emphasize with user needs
    - Ideation: potential problems with existing entity
  - Design an “intelligent” alternative (video prototype) 5%
    - Fulfill the identified user needs
    - Bonus given to designs that is low-cost and sustainable
  - Group presentation and personal diary on portfolio 5%
    - Present: in-class project presentation (Feb 28)
    - Personal reflection on the experiences and lessons
    - Text, pictures, diagrams, video, etc.

(1) Projects 55% (cont.)

- **P2: HRI in Self-Quarantine 20%**
  - Identify a user scenario that needs HRI service 5%
    - Needfinding: identify the potential need(s) people have during self-quarantine and issues with existing solutions
  - 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 1)
    - Personal reflection on the experiences and lessons
    - Text, pictures, diagrams, video, etc.
  - Lab 1&2: voice assistant and Botkit chatbot programming tutorial (in lab Thu 9am March 10 & 17)

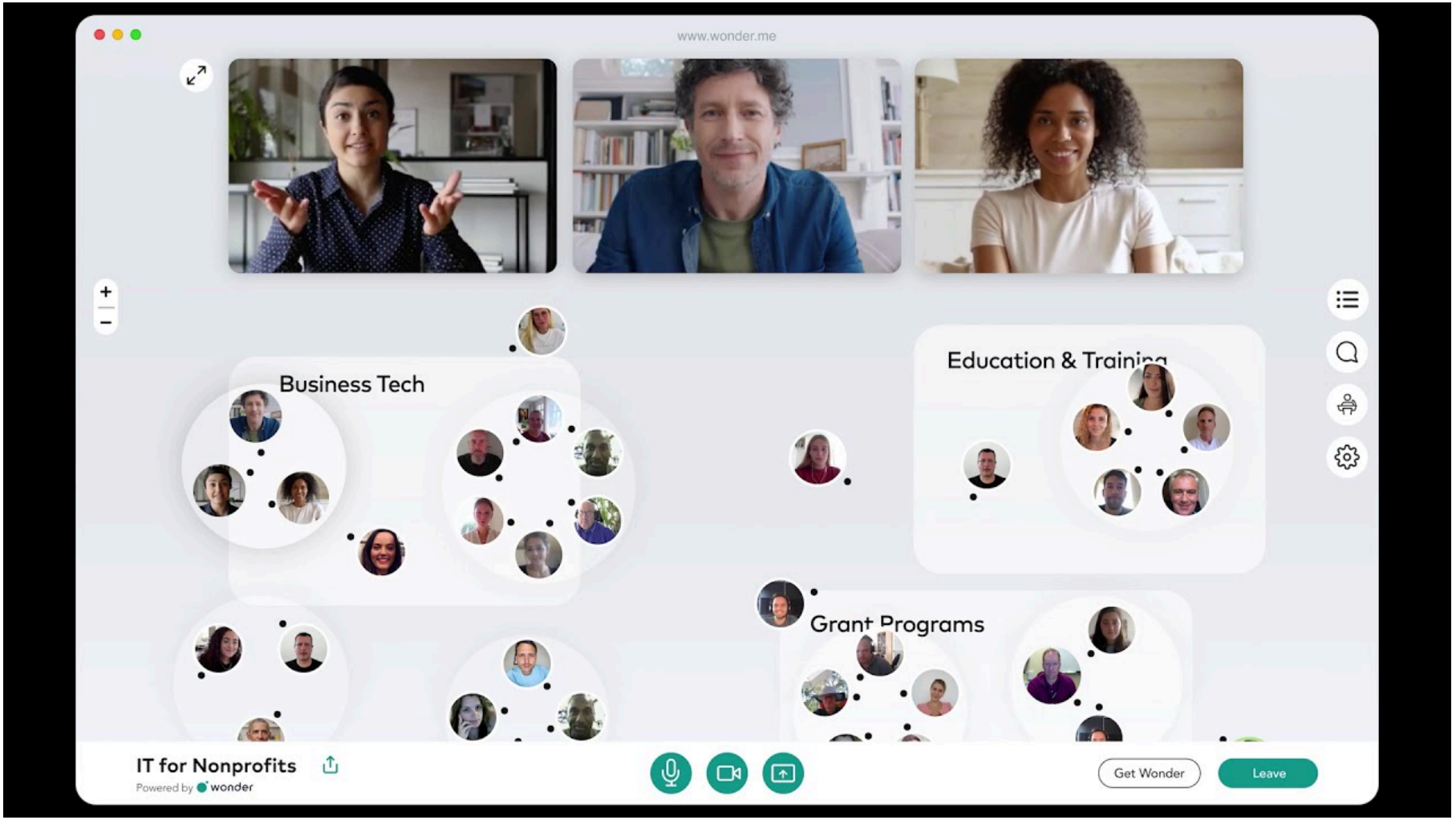
(1) Projects 55%

- **P3: Social VR for "Remotely Together" 20%**
  - Identify a user scenario for social VR services 5%
    - Empathize: events that people want to have remotely together, e.g., attending concerts, sports games, conferences, exhibitions, second-hand markets, etc.
    - Needfinding: pros & cons of this existing online solutions
  - 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 6)
    - Personal reflection on the experiences and lessons
    - Text, pictures, diagrams, video, etc.
  - Lab 3: VR/AR programming (in lab Thu 9am March 24)

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

https://www.wonder.me/



(2) Midterm Exercise 20%

- In-class Midterm Exercise
  - Monday, April 11
- 4~5 Questions (80min)
  - Problem-solving questions
  - Design questions
- Open Book
  - Textbook and printed lecture notes only
  - Specified computing device and tools

(4) Final Video Paper 15%

- Theme “Lifelong / Life-Wide Learning”
  - https://uil.unesco.org/fileadmin/keydocuments/LifelongLearning/en/UNESCOTechNotesLLL.pdf
  - https://www.edb.gov.hk/en/curriculum-development/curriculum-area/life-wide-learning/index.html
- Length: 2~5 min
- Video Showcase
  - Final Screening on April 25 and 29
  - 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
  - Photo of the Semester Contest: “The good, the bad, the ____”
  - 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

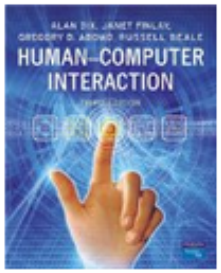
  https://www.elsevier.com/books/research-methods-in-human-computer-interaction/lazar/978-0-12-805390-4

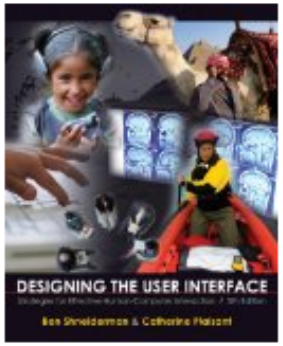
- Alan Dix, Janet Finlay, Gregory Abowd & Russell Beale. *Human-Computer Interaction* (3rd Edition). Prentice Hall, 2004. ISBN 0-13-046109-1.

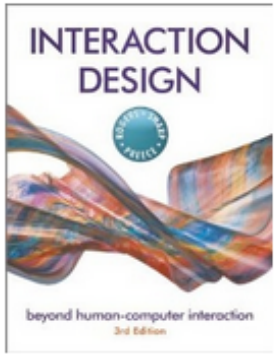
  http://hcibook.com/e4/

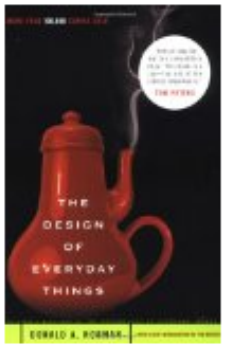
“Stay hungry. Stay foolish.”

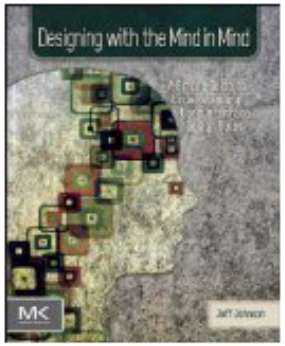
- By Steve Jobs

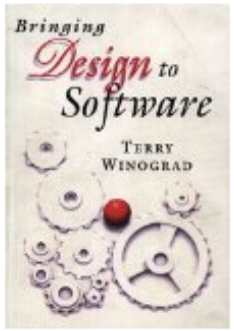


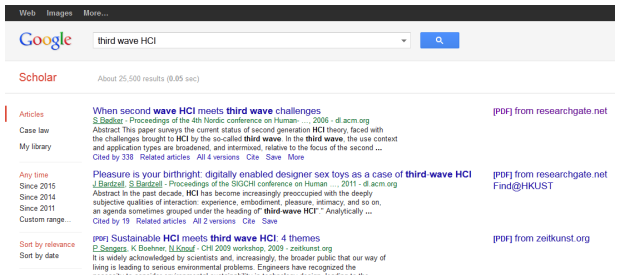


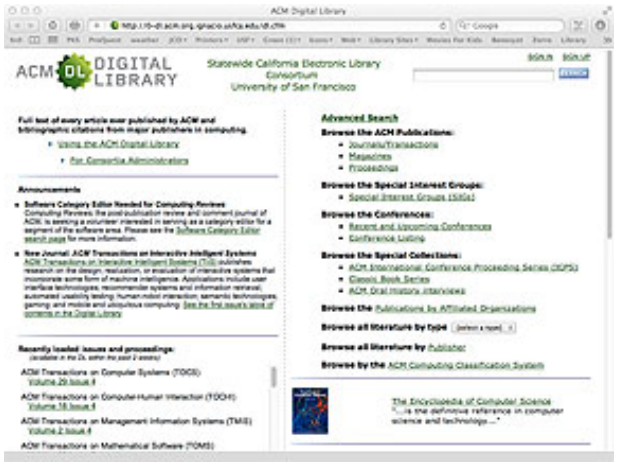


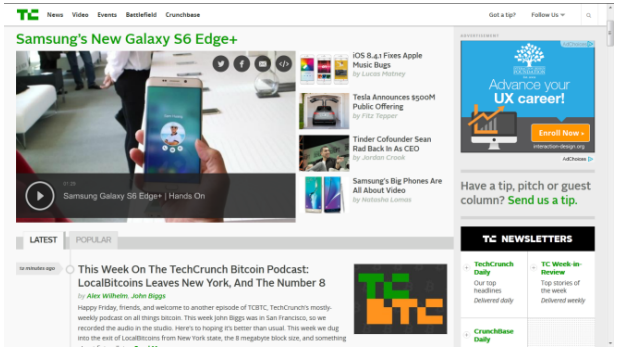


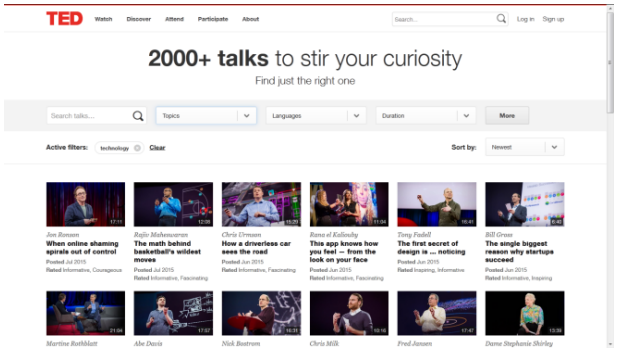


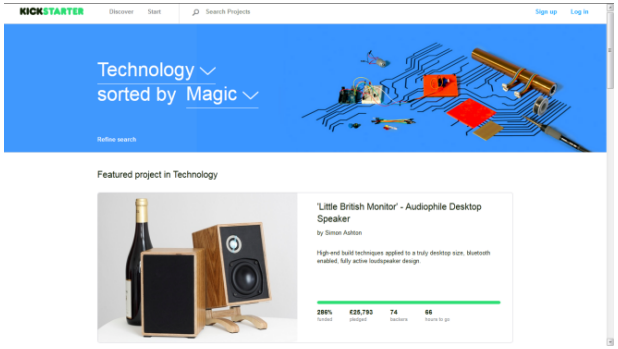






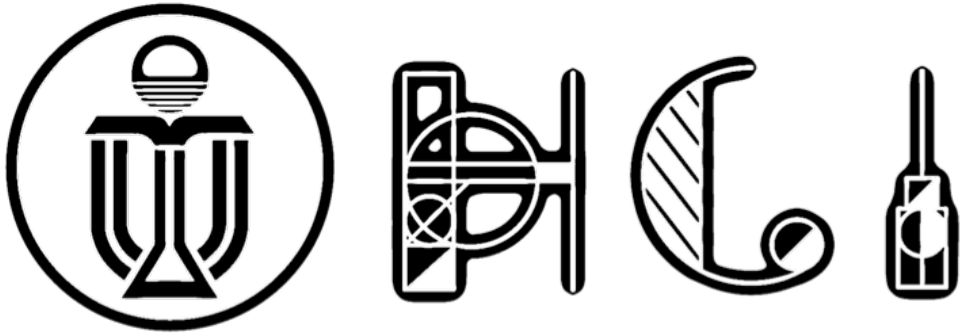






Learning Aims

Conscious **Critical** **Creative**



Questions?

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mxj@cse.ust.hk