

## Human-Centered Computing (HCC) Spring 2021

**Place:** Delta 601, NTHU or Room 107, New Building, IIS, AS

**Time:** 09:00~12:00 Friday

**Chair:** Prof. Li Su (Institute of Information Science, AS)

**Lecturer:** Prof. Li Su (IIS, Academia Sinica)

**Outline:** The course aims to provide graduate students of the TIGP program of Social Network and Human-Centered Computing (SNHCC) an overview of human-centered computing (HCC), particularly from the view of user-oriented computing system design and research. As an emerging, multidisciplinary field, HCC is commonly referred to and characterized by the idea of devising designs of computing systems based on properties, needs and constraints of the users and their tasks, rather than the inverse. Thus HCC embodies more than technology building, such as how to the software and hardware systems for supporting people. It also includes systematic understanding of people and the interactions between people and technologies. In this course, we'll explain and illustrate the state of the art of human-centered computing, focusing on fundamental concepts and practices of interface/interaction design and engineering, methods for studying users/tasks, methods for design-prototyping, and key topics that are closely related to the TIGP program, such as human computation, social computing, IUI, and AI etc.

**Reference:** Yvonne Rogers, Helen Sharp, Jenny Preece. *Interaction Design: Beyond Human-Computer Interaction*. 3<sup>rd</sup> Ed. 2011 (the "ID book")

**Office hours:** by appointment

### Grades:

**(20%) In-class discussion:** Every student needs to lead the discussion of the assigned papers X times (depending on the # of students). Other students need to actively participate in the discussion. Both leading and participation are graded.

**(20%) After-class report:** Every leader needs to write a report to summarize the discussion with remarks every time.

**(60%) Final project:** Students needs to pick a research topic that addresses an existing human problem (i.e. related to Human Centered Computing), conduct a literature review for that topic, and plan a research study.

- **15%: Proposal - the midterm report is a proposal for the final project with a literature review of the project.**
- **25%: Final project paper - contains a literature review for the topic and a study plan**
- **25%: Final project presentation - an in-class oral presentation of the final paper.**
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	Date	Topics/Brief Description	Lecturers
1	2021/02/26	Introduction	Li Su
2	2021/03/05	User interface technology (I): Vision and sound	Li Su
3	2021/03/12	User interface technology (II): Haptics and body	Li Su
4	2021/03/19	User interface technology (III): Augmented and mixed reality	Li Su
5	2021/03/26	User interface technology (IV): Brain	Li Su
6	2021/04/02	No class (Holiday-Tomb Sweeping Festival and Children's Day)	---
7	2021/04/09	Guest talk (I): Informing Human-Centred Computing with Cognitive Neuroscience	Vincent Cheung
8	2021/04/16	HCI and AI (I): Intelligent support	Li Su
9	2021/04/23	Midterm Exam	---
10	2021/04/30	HCI and AI (II): Active and interactive machine learning	Li Su
11	2021/05/07	HCI and AI (III): Recommendation systems	Li Su
12	2021/05/14	Guest talk (II)	Yu-Fen Huang
13	2021/05/21	Guest talk (III): Development of a Checklist for Dialysis Safety through the Lens of Human-Computer Interaction (HCI)	Pei-Yi Patricia Kuo

<b>14</b>	2021/05/28	HCI and AI (IV): Explainable AI	Li Su
<b>15</b>	2021/06/04	CSCW (I): Affective computing	Li Su
<b>16</b>	2021/06/11	CSCW (II): Social computing	Li Su
<b>17</b>	2021/06/18	Final project presentation	Li Su
<b>18</b>	2021/06/25	Final Exam No Class	---