2019 가을학기

HCI 연구방법론

담당교수 이준환
e. joonhwan@snu.ac.kr
c. 010-9212-4975
o. 64동 405호

시간 화 1, 2, 3 (10:00 ~ 12:50)

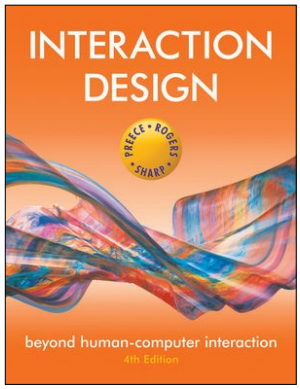
장소 64동 303호

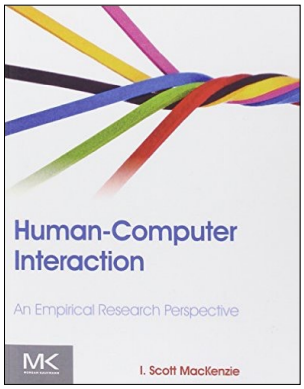
Course Description 인간-컴퓨터 상호작용 (HCI: Human-Computer Interaction) 은 컴퓨터 과학, 공학, 심리학, 사회과학, 디자인 등 다양한 분야의 전문가들이 중요한 역할을 수행하는 융합 학문이다. 현대 사회에서 사람들은 컴퓨터를 일상 생활의 중요한 도구로 사용하면서 다양한 문제점들에 직면하곤 하는데, HCI는 시스템의 디자인과 컴퓨터 기술이 실제로 사용되는 과정에서 발생하는 문제점을 해결하는 방법론을 제시하는 것을 목표로 하고 있다.

이 수업에서 학생들은 먼저 HCI 분야의 여러 연구 주제들을 다루고, HCI 방법론의 학습을 통해 HCI 연구 프로젝트를 수행하고 논문을 작성하는 과정을 경험하게 된다.

강의내용
1. HCI의 overview 및 주요 토픽 소개
2. HCI 방법론 학습
3. 실제 연구 프로젝트를 통한 방법론의 적용

교재
- T1: Jenny Preece, Helen Sharp, Yvonne Rogers, Interaction Design, beyond human-computer interaction, 4rd Edition, Wiley
- T2: I. Scott MacKenzie, Human-Computer Interaction, An Empirical Research Perspective, MK
- 기타 ACM SIGCHI 논문 (필요에 따라 제공)





수업진행 계획

1주 (9/3) Introduction to HCI
History of HCI

Readings

- T2: Chapter 1

2주 (9/10) Foundation of HCI:
Understanding and Conceptualizing Interaction

Readings

- T1: Chapter 1, 2
- Wobbrock, J. O., & Kientz, J. A. (2016). Research Contributions in Human-computer Interaction. Interactions, 23(3), 38 – 44

3주 (9/17) Foundation of HCI:
Cognitive Aspects / Interfaces

Readings

- T1: Chapter 3, 6
- Grudin, J. (2005). Three faces of human-computer interaction, IEEE Annals of the History of Computing, 46-62.
- Card, S. & Moran, T. (1986). User technology—from pointing to pondering. In Proceedings of the ACM Conference on the History of Personal Workstations (Palo Alto, California, United States, January 09 – 10, 1986). J. R. White and K. Anderson, Eds. ACM, New York, NY, 183-198.
- Myers, B., Hudson, S. E., & Pausch, R. (2000). Past, present, and future of user interface software tools. ACM Transactions on Computer-Human Interaction, 7 (1), 3 – 28.
- Weiser, M. (1999). The computer for the 21st century. ACM SIGMOBILE Mobile Computing and Communications Review, 3(3), 3 – 11.
- Hollan, J., Hutchins, E., & Kirsh, D. (2000). Distributed cognition: toward a new foundation for human-computer interaction research. ACM Transactions on Computer Human Interaction, 7 (2), 174 – 196.

Team Discussion – How HCI shaped/will shape our computing life? (1 hour)

4주 (9/24) Interaction Elements

Readings

- T2: Chapter 3

Final Research Team 구성

5주 (10/1) Social Interaction / Emotional Interaction

Readings

- T1: Chapter 4, 5
- Nass, C. & Moon, Y. (2000). Machines and mindlessness: Social responses to computers. Journal of Social Issues, 56 (1): 81-103.
- Sproull, L., Subramani, M., Kiesler, S., Walker, J., & Waters, K. (1996). When the Interface Is a Face. Human-Computer Interaction, 11(2), 97-124.
- Lee, J., Jun, S., Forlizzi, J., & Hudson, S. E. (2006). Using kinetic typography to convey emotion in text-based interpersonal communication (ACM, pp. 41 - 49). Presented at the Proceedings of the 6th conference on Designing Interactive systems, New York, NY, ACM.
- Norman, D. (2004). Emotional design: Why we love (or hate) everyday things. New York: Basic Books. Chapter 1

Team Discussion: Social / Emotional Interaction

6주 (10/8) Interaction Design Methods:
Contextual Inquiry, Observation, Persona, Scenario, Think Aloud

Team Meeting: Reading Hundred CHI Papers

7주 (10/15) Scientific Foundation
Computer-Supported Collaborative Work (CSCW) / Social Computing

Readings

- T2: Chapter 4
- Grudin, J. (1994). Computer-supported cooperative work: history and focus. Computer, 27, 19-26.
- Ellis, C. A., Gibbs, S. J., and Rein, G. (1991). Groupware: some issues and experiences. Communications of the ACM, 34, 1, 39-58.
- Erickson, T., & Kellogg, W. A. (2000). Social Translucence: An Approach to Designing Systems That Support Social Processes. ACM Transactions on Computer-Human Interaction, 7(1), 59 - 83.
- Lazer, D., Pentland, A., Adamic, L., Aral, S., Barabási, A.-L., Brewer, D., et al. (2009). Computational Social Science. Science, 323(5915), 721 - 723

Team Discussion: CSCW / Social Computing

8주 (10/22) Designing HCI Experiments
Ubiquitous Computing / Human-Robot Interaction

Readings

- T2: Chapter 5
- Weiser, M. (1999). The computer for the 21st century. ACM SIGMOBILE Mobile Computing and Communications Review, 3(3), 3 - 11.
- Abowd, G. D. and Mynatt, E. D. (2000). Charting past, present, and future research in ubiquitous computing. ACM Trans. Comput.-Hum. Interact. 7, 1 (Mar. 2000), 29-58.
- Kiesler, S., & Hinds, P. (2004). Introduction to This Special Issue on Human-robot Interaction. Human-Computer Interaction, 19(1), 1-8.
- Mutlu, B. & Forlizzi, J. (2008). Robots in organizations: the role of workflow, social, and environmental factors in human-robot interaction. In Proceedings of the 3rd ACM/IEEE international Conference on Human Robot interaction '08. ACM, 287-294.

Team Discussion: UbiComp / HRI

9주 (10/29) Hypothesis Testing

Readings

- T2: Chapter 6

Team Meeting: Reading Hundred CHI Papers

10주 (11/5) IRB Session

11주 (11/12) Modeling Interaction
Information Visualization

Readings

- T2: Chapter 7
- Card, S.K., Mackinlay, J.D., & Shneiderman, B. (1999). Information Visualization. Chapter 1 of Readings in Information Visualization. Morgan-Kaufmann, p. 1-34.
- Van Wijk, J.J. (2005). The value of visualization. Proceedings of IEEE Visualization, 79-86.

Team Discussion: InfoVis

Team Meeting: Reading Hundred CHI Papers / Discuss Research Idea

12주 (11/19) Writing and Publishing a Research Paper

Readings

- T2: Chapter 8

Team Meeting: Reading Hundred CHI Papers / Review Experiment

13주 (11/26) Research Idea Presentation

14주 (12/3) Team Meeting: Reading Hundred CHI Papers / Final Paper Review

15주 (12/10) Final Presentation / Final Paper Submit

Coursework Team Team Discussion

- A팀: 페이퍼 발제 준비
- B팀: 페이퍼 토론 준비 (Random Select)

Reading Hundred CHI Papers

- Read title and abstract → narrow down topic area
- Read introduction and conclusion → summarize paper
- Read full papers

Final Team Project
연구주제를 잡고 수업에서 다룬 HCI 방법론을 활용하여 **연구 프로젝트 진행**

평가 출석: 10%
Team Discussion: 40%
최종 프로젝트: 50% (발표 15, 페이퍼 25, Peer Evaluation 10)