

Min Chul Cha

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EDUCATION

Yonsei University Ph.D. in Industrial Engineering Dissertation topic: Users' Modality Selection in Multimodal System Advisor: Yong Gu Ji	Seoul, Korea 2016-2023
Yonsei University B.S in Industrial Engineering	Seoul, Korea 2009-2016

RESEARCH INTERESTS

Human-computer interaction; Multimodal interaction; Voice user interface; Modality selection; automotive UI; Virtual Reality (VR)

EMPLOYMENT

Engineering Research Institute, Yonsei University Postdoctoral Fellow	Seoul, Korea Feb.2023 – present
Human Factors & Interaction Design Lab, Yonsei University Research Assistant. Mentor: Yong Gu Ji	Seoul, Korea Mar. 2016 – Feb.2023

GRANTS

G1. Responsive Multimodal Interface Technology to Improve the Safety and Usability of In-vehicle Interactions
National Research Foundation of Korea (NRF), \$132,500 (2023-2026)

PUBLICATIONS

Journal Publications

J12. **Min Chul Cha**, Hyo Chang Kim, and Yong Gu Ji. "User Modality Selection in Touch and Voice-based Multimodal Systems: The Role of Modality Features and Menu." Computers in Human Behavior (Under Review)

- J11. **Min Chul Cha**, Chae Heon Lim, Young Woo Kim, Sol Hee Yoon, and Seul Chan Lee. "How Do Users Regulate Interaction Behaviors while Performing a Drag-and-Drop Task in a Virtual Reality Environment?" *International Journal of Human-Computer Interaction* (Responding after first review)
- J10. Reza Kazemi, Chae Heon Lim, **Min Chul Cha**, and Seul Chan Lee. "Evaluation of Drag-and-Drop Task in Virtual Environment: Effects of Target Size and Movement Distance on Performances and Workload" *International Journal of Human-Computer Interaction* (2023)
- J9. **Min Chul Cha** and Yong Gu Ji. "Context Matters: Understanding the effect of usage contexts on users' modality selection in multimodal systems." *International Journal of Human-Computer Interaction* (2023)
- J8. Seong Yong Bae, **Min Chul Cha**, Sol Hee Yoon, and Seul Chan Lee. "Investigation of Touch Button Size and Touch Screen Position of IVIS in a Driving Context." *Journal of the Ergonomics Society of Korea*, 42.1 (2023)
- J7. **Min Chul Cha**, Hyo Chang Kim, and Yong Gu Ji. "The unit and size of information supporting auditory feedback for voice user interface." *International Journal of Human-Computer Interaction* (2023)
- J6. Kim, Hyo Chang, **Min Chul Cha**, and Yong Gu Ji. "The impact of an agent's voice in psychological counseling: Session evaluation and counselor rating." *Applied Sciences* 11.7 (2021): 2893.
- J5. Ji Yea Lee, Juhee Lee, Yeonsoo Jang, Eun Chae Kim, Yong Gu Ji Taezoon Park, Sang Yoon Um, **Min Chul Cha**, and Yielin Kim. "Status Quo and Innovative Directions for Inpatient Fall Interventions." *Journal of Korean Academy of Fundamentals of Nursing* 27.4 (2020): 356-365.
- J4. Kim, Hyo Chang, **Min Chul Cha**, and Yong Gu Ji. "The effect of empathy on human-agent interaction." *ICIC Express Letters, Part B: Applications* 11.6 (2020): 551-557.
- J3. Seul Chan Lee, **Min Chul Cha**, and Yong Gu Ji. "Investigating smartphone touch area with one-handed interaction: Effects of target distance and direction on touch behaviors." *International Journal of Human-Computer Interaction* 35.16 (2019): 1532-1543.
- J2. Ara Lee, Hyo Chang Kim, **Min Chul Cha**, and Yong Gu Ji "A Study on the Client Experience using Chatbot based on Counseling Theory." *Journal of the Ergonomics Society of Korea* 38.3 (2019).
- J1. Seul Chan Lee, **Min Chul Cha**, Hwan Hwangbo, Sookhee Mo, and Yong Gu Ji. "Smartphone form factors: Effects of width and bottom bezel on touch performance, workload, and physical demand." *Applied ergonomics* 67 (2018): 142-150.

Conference Publication

- C4. 김효창, 김유림, & 차민철. (2023). 자율주행 차량에서 운전자의 효과적인 차량 인터페이스 조작을 위한 멀티모달시스템 연구 방안. 202 년 대한산업공학회 춘계공동학술대회, 1405-1409.
- C3. **Min Chul Cha**, Cherin Lim, Jae Moon Sim, Da Yeong Kim, and Yong Gu Ji "A Study on Sensibility Evaluation for Smartphone Camera Photography Based on Text Mining." *Proceedings of 2021 Fall Conference of ESK* (2021): 153-153.
- C2. **Min Chul Cha**, Hwan Hwangbo, Seul Chan Lee, and Yong Gu Ji. "F8-3 The effects of smartphone edge display on EMG activity of thumb muscles in one-handed interaction." *The Japanese Journal of Ergonomics* 53.Supplement2 (2017): S672-S675.
- C1. **Min Chul Cha**, Bo Myeong Kim, Jiin Lee, and Yong Gu Ji. "Usability evaluation for user interface of a drone remote controller." *Proceedings of the ESK Conference*. 2016.

PATENTS

- P4. **Min Chul Cha**, Yong Gu Ji, Hyo Chang Kim, Hyunjung Yang, Ji Geun Kim, and Ji-Won Lee. “Adaptive voice AI agent system according to conversation content and user type.” Korean Patent (filled) (10-2020-0150490)
- P3. **Min Chul Cha**, Yong Gu Ji, Hyo Chang Kim, Hyunjung Yang, Ji Geun Kim, and Ji-Won Lee. “Method for Generating Conversation in Conversational AI agent system.” Korean Patent (filled) (10-2020-0010959).
- P2. **Min Chul Cha**, Yong Gu Ji, Hyo Chang Kim, Hyunjung Yang, Ji Geun Kim, and Ji-Won Lee. “Device and Method of Scoring Emotion for Psychological Consultation.” Korean Patent (granted) (10-2225603).
- P1. **Min Chul Cha**, Yong Gu Ji, and Hyo Chang Kim. “Wearable life logging device for baby and life logging method.” Korean Patent (granted) (10-1748494) / PCT (filled) (PCT/KR2016/001409).

RESEARCH EXPERIENCE

Responsive Multimodal Interface Technology to Improve the Safety and Usability of In-vehicle Interactions <i>National Research Foundation of Korea (NRF) (2023.09~)</i>	Principal Investigator
Motion Features for Smartphone Objects to Enhance User Emotion <i>Samsung Electronics (2023.04~2023.10)</i>	Project Manager
Digital Transformation of Small and Medium Manufacturers <i>Gabo Corp. Korea (2022.03~2023.01)</i>	Project Manager
Interface Optimization Study for Autonomous Driving UX <i>Hyundai Motors (2021.05~2022.05)</i>	Project Manager
Perceived Image Quality of Smartphone Camera <i>Samsung Electronics (2021.04~2021.10)</i>	Project Manager
Emotional Intelligence Technology to Infer Human Emotion and Carry-on Dialogue Accordingly <i>MSIT(Korea) (2016.12~2020.12)</i>	Project Manager
Development of a Digital Transformation Maturity Model <i>KEPCO (2020.03~2020.07)</i>	Project Manager
Evaluation of Usability of Smartphone (A Study on the Proper Form Factor Level in Mobile Environment) <i>LG Electronics (2016.12~2017.04)</i>	Project Assistant
Development of an User-Centered Product Design Support System based on Cognitive and Affective Information <i>Ministry of Trade, industry and Energy (2015.12~2016.11)</i>	Project Assistant

TEACHING

Instructor, Yonsei University (Undergraduate)

- IIE4115: Human-Computer Interaction (2021S)
- IIE2002: UT seminar - HCI in the smart era (2019F)

ACADEMIC SERVICE

Organization & Committee

Student Volunteer Chair, AutoUI 2022	2022
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Journal or Conference Reviewer

Internation Journal of Human-Computer Interaction (IJHCI) 2023	2023
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Automotive User Interfaces (AutoUI) 2022	2022
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SKILLS

Programming/Technologies

Language: Python, JavaScript, Unity(C#), HTML, CSS, PHP, MySQL, Google Apps Script; libraries: Flask, jQuery, TensorFlow, scikit-learn; Platform: Arduino, Proxmox VE, Docker
- Developed full-stack web services that processed, analyzed, and rendered data visually

Statistic: SPSS, R, MATLAB

Other: MS Office, Photoshop, Premiere, After Effect

Spoken Languages

Korean, English