

Sangwook Lee

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RESEARCH INTEREST

I design and study **AI-based agents that bridge gaps between people**, at the intersection of **Human-AI Interaction, Social Computing, and Accessibility**:

- **Bridging the knowledge gap** – a *knowledge agent* that turns everyday lab communication into organizational memory, reducing information asymmetry among members (CHI '26)
- **Bridging the digital divide** – a *UI agent* that adapts GUIs and navigation to user preferences, reducing accessibility gaps in complex digital systems (UIST '26)

EDUCATION

Virginia Tech

Ph.D. in Computer Science

- Advisor: Sang Won Lee

Blacksburg, VA

Aug. 2024 – May 2029 (Expected)

Korea Advanced Institute of Science and Technology (KAIST)

M.S. in Computer Science

- Advisor: Insik Shin
- Thesis: A Task-Oriented Multimodal Agent System to Enhance Mobile User Interface Accessibility for Older Adults

Daejeon, Korea

Sep. 2021 – Feb. 2024

Pohang University of Science and Technology (POSTECH)

B.S. in Convergence IT Engineering (Cum Laude)

Pohang, Korea

Mar. 2014 – Aug. 2020

HONORS & AWARDS

- **Honorable Mention Award** (Top 5% of accepted papers), ACM CHI 2026
- **Outstanding Reviewer Recognition** (×3), ACM CHI 2026
- **Honorable Mention**, ACM CHI 2016 Student Design Competition (Final Round)
- **Cum Laude**, POSTECH, Aug. 2020

REFEREED JOURNALS AND CONFERENCE PROCEEDINGS

MAESTRO: Adapting GUIs and Guiding Navigation with User Preferences in Conversational Agents with GUIs

Sangwook Lee, Adnan Abbas, Sang Won Lee, Young-Ho Kim, Yan Chen

UIST '26: Proceedings of the 39th Annual ACM Symposium on User Interface Software and Technology

CHOIR: A Chatbot-mediated Organizational Memory Leveraging Communication in University Research Labs

Sangwook Lee, Adnan Abbas, Yan Chen, Young-Ho Kim, Sang Won Lee

CHI '26: Proceedings of the 2026 CHI Conference on Human Factors in Computing Systems

★ **Honorable Mention (Top 5% Accepted Paper)**

Toward Context-Aware and Personalized Sit-Stand Desk Interventions: Insights from a Field Observational Study

Donghan Hu, Junghoon Chung, Daniel Vargas Diaz, **Sangwook Lee**, Sang Won Lee, Sol Lim
International Journal of Human-Computer Studies, Vol. 215 (2026)

ModSandbox: Facilitating Online Community Moderation Through Error Prediction and Improvement of Automated Rules

Sangwook Lee*, Jean Y Song*, Jisoo Lee, Mina Kim, Juho Kim (*Equal Contribution)
CHI '23: Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems

A-Mash: Providing Single-App Illusion for Multi-App Use Through User-centric UI Mashup

Sunjae Lee, Hoyoung Kim, Sijung Kim, **Sangwook Lee**, Hyosu Kim, Jean Young Song, Steven Y. Ko, Sangeun Oh, Insik Shin
MobiCom '22: Proceedings of the 28th Annual International Conference on Mobile Computing And Networking

LIGHTLY REVIEWED PAPERS - POSTERS, NOTES, AND WORKSHOP PAPERS

Redistributing Interdependence in Organizational Knowledge Work: Lessons from Deploying an LLM Mediator in Research Labs

Sangwook Lee, Sang Won Lee
Co-Data: Cultivating Effective Human-LLM Collaboration for Collaborative Data Processing Workshop at CHI '26

TUNING: Adaptive GUI Modification as Agent Tools in Task-Oriented Chatbots

Sangwook Lee, Sang Won Lee
Human-AI-UI Interactions Across Modalities Workshop at CHI '26

LV-Linker: Supporting Fine-grained User Interaction Analyses by Linking Smartphone Log and Recorded Video Data

Hansoo Lee, **Sangwook Lee**, Youngji Koh, Uichin Lee
UIST '22 Adjunct: Adjunct Proceedings of the 35th Annual ACM Symposium on User Interface Software and Technology

Implications for the Design of Sexual Harassment Prevention System for Online Games

Wookjae Maeng, Hyeok Kim, Junhee Woo, Youngjin Huh, Seo-young Lee, Jeewon Choi, **Sangwook Lee**, Jinsu Eun, Kung Jin Lee, Joonhwan Lee
Proceedings of HCI Korea 2018

Mutiv: Music-based Mobile Application to Support Joggers

Sangwook Lee, Hyunggu Jung
2016 IEEE International Conference on Healthcare Informatics (ICHI)

LaneMate: Car Sensing System for the Deaf

Sangwook Lee, Yunho Kang, Yukyoung Lee

CHI EA '16: Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems

★ **Honorable Mention (Student Design Competition Final Round)**

RESEARCH EXPERIENCE

echolab, Virginia Tech

Blacksburg, VA

Graduate Research Assistant (Advisor: Sang Won Lee)

Aug. 2024 – Present

- Built and deployed CHOIR, an LLM-based Slack chatbot that turns everyday lab communication into organizational memory via document-grounded (RAG) Q&A, conversational knowledge extraction, and AI-assisted updates to GitHub-versioned documents (CHI '26, Honorable Mention)
- Ran a month-long field deployment of CHOIR across 4 university research labs (N=21; 107 questions asked, 38 document updates applied) with a formative interview study (N=15), combining usage-log analysis with log-informed interviews
- Designed MAESTRO, a conversational agent that adapts GUIs in place (augment, filter, sort, highlight) and guides workflow backtracking, grounded in an LLM-maintained preference memory and driven by LLM tool calling (UIST '26)
- Evaluated MAESTRO in a 2×2 within-subjects experiment (N=33; 132 trials) analyzed with mixed-effects models (GLMM/LMM), showing significantly fewer hard-preference violations and unpreferred selections than a baseline agent

SaNDwich Lab, University of Notre Dame

South Bend, IN

Visiting Student (Mentor: Toby Jia-Jun Li)

Jun. 2023 – Aug. 2023

- Coordinated a study on a task-oriented multimodal agent system to improve older adults' smartphone experience
- Mentored two undergraduates to develop a conversational agent that interacts with mobile web applications powered by OpenAI API

KIXLAB, KAIST

Daejeon, Korea

Research Intern (Mentor: Juho Kim, Jean Y. Song)

Sep. 2020 – Sep. 2021

- Led research on ModSandbox, a virtual sandbox system that predicts false positives/negatives of rule-based moderation tools before deployment using sentence-embedding similarity (CHI '23)
- Conducted formative surveys and in-depth interviews with Reddit moderators, followed by a between-subjects evaluation study with 20 active online moderators
- Developed the system as a React/Django web application that tests AutoModerator rules against real community posts, visualizing violations and surfacing potentially erroneous cases

HCI+D Lab, Seoul National University

Seoul, Korea

Research Intern (Mentor: Joonhwan Lee)

Jul. 2017 – Aug. 2017

- Conducted a participatory design workshop with female gamers to address sexual harassment in online games

WORK EXPERIENCE

Fluiz, Inc.

Seoul, Korea

Software Engineer

Feb. 2024 – Aug. 2024

- Led the development of an intelligent workflow automation system for commercial ERP solutions, leveraging LLMs to capture and operationalize domain expertise
- Built a Chrome extension-based interaction recording tool enabling domain experts to easily translate business workflows into automation-ready data
- Designed an execution server that stores recorded workflows in a graph database and automates web-based tasks through multi-turn conversations

SKILLS

Research Methods

- **Study Design** – Within-subjects controlled experiments (Latin-square counterbalancing), field deployment studies, formative & semi-structured interviews, surveys
- **Analysis** – Mixed-effects models (GLMM/LMM), non-parametric tests (Friedman, Wilcoxon), thematic analysis & open coding, LLM-assisted content analysis

Engineering

- **LLM Systems** – OpenAI & Anthropic APIs, agent tool calling, RAG with embedding retrieval, prompt engineering, voice interfaces (STT/TTS), LangChain
- **Agentic Coding** – Claude Code, Cursor IDE
- **Web & Chatbot Development** – React, TypeScript, Express, Fastify, Django, Prisma, Slack Bolt & GitHub APIs
- **Programming Languages** – Python, TypeScript/JavaScript, R, C/C++
- **Prototyping** – Figma, Claude Design

Language

- **Korean** – Native
- **English** – Fluent

ACADEMIC SERVICES

- **Reviewer** – ACM UIST 2026, ACM CHI 2026, CSCW 2024, CHI 2023 LBW
- **Student Volunteer** – CHI 2026, 2025, 2024 (Photography SV); CHI 2023 (On-site); CHI 2022, 2021, CSCW 2020 (Remote)

TEACHING

Data and Algorithm Analytics

Fall 2025

VT CS4104 Teaching Assistant (Instructor: Thang Hoang)

Human-Computer Interaction

Fall 2023

KAIST CS584 Teaching Assistant (Instructor: Geehyuk Lee)

Operating Systems and Lab

Fall 2021

KAIST CS330 Teaching Assistant (Instructor: Insik Shin)