# Yoonsu Kim

Ph.D. Student | HCI Researcher
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## Research Interests

My research is in Human-AI Interaction (HAI). I am particularly interested in understanding the difficulties users face when interacting with AI, and designing human-centered AI systems that amplify people's abilities.

I have been focused on designing **cognitive collaboration with AI**, along three aspects: ***intent alignment***, ***context sharing***, and ***deliberate delegation*** for ensuring human agency.

I am also interested in **AI for education** and learning at scale, such as diagnosing students' problem-solving and cognitive skills with LLMs, and in making AI behavior legible to people, such as explaining why vision models fail in natural language.

Through my work, I aim to contribute to helping people better utilize new technology 🌏❤️.

## Education

**KAIST** — **Feb 2024 - Present**
Ph.D. in School of Computing
Advisor: Juho Kim
Daejeon, Republic of Korea

**KAIST** — **Feb 2022 - Feb 2024**
M.S. in AI (Specialization: Human-AI Interaction)
Advisor: Juho Kim
Daejeon, Republic of Korea

**POSTECH** — **Feb 2017 - Feb 2022**
B.S. in Computer Science and Engineering
*Magna cum laude*
Pohang, Republic of Korea

## Publications

### Preprints

[P1] **What Did the AI Take On? Characterizing Cognitive Delegation in LLM Reasoning**
**Yoonsu Kim**, Sean Kim, Kihoon Son, Saelyne Yang, Juho Kim
[link]

[P2] **STEPwise: Supporting Teachers in Diagnosing Students' Mathematical Problem-Solving Skills through LLM-Generated Questions and Rubrics**
**Yoonsu Kim**, Hayeon Doh, Eunhye Kim, Jinho Son, Juho Kim
[link]

Last updated: November 27, 2026

[P3] **"When to Hand Off, When to Work Together": Expanding Human-Agent Co-Creative Collaboration through Concurrent Interaction**
Kihoon Son, Hyewon Lee, DaEun Choi, **Yoonsu Kim**, Tae Soo Kim, Yoonjoo Lee, John Joon Young Chung, HyunJoon Jung, Juho Kim
[link]

## Conferences and Journal Papers

[C1] **Diagnosing Students' Cognitive Skills from Handwritten Math Work with Large Language Models**
**Yoonsu Kim**, Hyoungwook Jin, Hayeon Doh, Eunhye Kim, Dongyun Jung, Seungju Kim, Kiyoon Choi, Jinho Son, Juho Kim
Accepted to *LAK 2027* [link]

[C2] **Hypothesize and Verify: Natural-Language Explanations of Vision Model Errors**
Hyeon-Woo Nam, **Yoonsu Kim**, Kihoon Son, Juho Kim, Tae-Hyun Oh
*TMLR 2026*

[C3] **Contexty: Capturing and Organizing In-situ Thoughts for Context-Aware AI Support**
**Yoonsu Kim**, Chanbin Park, Kihoon Son, Saelyne Yang, Juho Kim
*UIST 2026* [link]

[C4] **IntentFlow: Investigating Fluid Dynamics of Intent Communication in Generative AI**
**Yoonsu Kim**, Brandon Chin, Kihoon Son, Seoyoung Kim, Juho Kim
*DIS 2026* [link]

[C5] **Understanding Users' Dissatisfaction with ChatGPT Responses: Types, Resolving Tactics, and the Effect of Knowledge Level**
**Yoonsu Kim**, Jueon Lee, Seoyoung Kim, Jaehyuk Park, Juho Kim
*IUI 2024* [link]

[C6] **AI-to-Human Actuation: AI Proactively Induces Humans towards Favorable Sensing Conditions**
Sungjae Cho, **Yoonsu Kim**, Jaewoong Jang, Inseok Hwang
*IMWUT 2023* [link]

## Posters, Demos, and Workshop Papers

[D1] **NEMO: Benchmarking Natural-Language Explanations of Vision Model Errors**
Hyeon-Woo Nam, **Yoonsu Kim**, Kihoon Son, Juho Kim, Tae-Hyun Oh
*ICML 2026 Workshop on AI4GOOD* [link]

[D2] **STEPwise: Diagnosing Students' Math Problem-Solving Skills via LLM-Generated Stepwise Sub-Questions**
**Yoonsu Kim**, Hayeon Doh, Eunhye Kim, Jinho Son, Juho Kim
*AIED 2026 Interactive Events Track* [link]

[D3] **Applying the Gricean Maxims to a Human-LLM Interaction Cycle: Design Insights from a Participatory Approach**
**Yoonsu Kim**, Brandon Chin, Kihoon Son, Seoyoung Kim, Juho Kim
*CHI25 EA (Late Breaking Work)* [link]

[D4] **LLM-as-a-tutor in EFL Writing Education: Focusing on Evaluation of Student-LLM Interaction**

Jieun Han, Haneul Yoo, Junho Myung, Minsun Kim, Hyunseung Lim, **Yoonsu Kim**, Tak Yeon Lee, Hwajung Hong, Juho Kim, So-Yeon Ahn, Alice Oh
*EMNLP 2024 Workshop on Customizable NLP (CustomNLP4U)* [link]

[D5] **LLM-Driven Learning Analytics Dashboard for Teachers in EFL Writing Education**
Minsun Kim, Junho Myung, Seon Gyeom Kim, Yoosang Yoon, Hyunseung Lim, **Yoonsu Kim**, Hwajung Hong, Alice Oh, Juho Kim, So-Yeon Ahn, and Tak Yeon Lee
*EMNLP 2024 Workshop on Customizable NLP (CustomNLP4U)* [link]

[D6] **Using Large Language Models to Diagnose Math Problem-Solving Skills at Scale**
Hyoungwook Jin*, **Yoonsu Kim***, Yeon Su Park, Bekzat Tilekbay, Jinho Son, Juho Kim (* Equal contribution)
*L@S 2024 WIP* [link]

[D7] **Beyond Prompts: Learning from Human Communication for Enhanced AI Intent Alignment**
**Yoonsu Kim**, Kihoon Son, Seoyoung Kim, Juho Kim
*CHI 2024 Workshop on Getting Back Together: HCI and Human Factors Joining Forces to Meet the AI Interaction Challenge* [link]

[D8] **RECIPE: How to Integrate ChatGPT into EFL Writing Education**
Jieun Han, Haneul Yoo, **Yoonsu Kim**, Junho Myung, Minsun Kim, Hyunseung Lim, Juho Kim, Tak Yeon Lee, Hwajung Hong, So-Yeon Ahn, Alice Oh
*L@S 2023 WIP* [link]

[D9] **Towards Understanding the Challenges and Remedies in AI Application Development**
Dae Hyun Kim*, **Yoonsu Kim***, Hyungyu Shin, Jinho Son, Juho Kim (* Corresponding authors)
*KCC 2023* [link]

[D10] **Demonstrating AHA: Boosting Unmodified AI's Robustness by Proactively Inducing Favorable Human Sensing Conditions**
Sungjae Cho, Jaewoong Jang, **Yoonsu Kim**, Inseok Hwang
*UbiComp/ISWC '23 Adjunct* [link]

## Experiences

**HIS Lab** (Human-Centered Intelligent System Lab in POSTECH)
Research Intern — **Jun 2021 - Feb 2022**
Human-Computer Interaction, Human-AI Interaction, Embedded AI System — Pohang, Republic of Korea

**NAVER Connect Foundation**
Manager of boostcamp — **Feb 2020 - Feb 2021**
Web & Mobile, AI Software Education — Seoul, Republic of Korea

**Neuromeka**
Software Development Intern — **Jun 2019 - Aug 2019**
Android application development for robot manipulation and robot database management — Pohang, Republic of Korea

**Samsung Electronics Co.**
Research Intern
Department of Visual Display, AI • Big Data Lab

**Jan 2019 - Feb 2019**
Suwon, Republic of Korea

**SK Telecom**
Software Development Intern
Department of Service Platform
AI Technology Unit, Knowledge and Technology Cell

**Jun 2018 - Aug 2018**
Seoul, Republic of Korea

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# Academic Services

## Organizing Committee

- Festival of Learning 2026, Web & Design Chair

## Program Committee

- LAK 2027

## Reviewer

- CHI 2025, 2026†, 2027††
- CHI LBW 2023, 2025, 2026†
- UIST 2025†, 2026††
- IJHCI 2025
- DIS 2026†
- TOCHI 2026

† Special Recognition for Outstanding Review (9 total)

## Student Volunteer

- CHI 2024
- UIST 2026

# Scholarship

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|---|---|
| **National Scholarship (Science and Engineering)** | **2017 - 2023** |
| **Global Leadership Program** | **Mar 2018 - Feb 2020** |
| **Samsung Dream Class Scholarship** | **Jan 2018 ~ Feb 2018** |

# Leadership & Service

## Leadership

**HCI@KAIST Committee**
Student Committee — **Mar 2024 - Dec 2025**

**KAIST-Google exploreCSR**
Student Organizer — **Mar 2023 - Aug 2024**

**POSTECH Student Council**
Director of Welfare Department — **Feb 2019 - Feb 2021**

**POSTECH Library Council**
President, Vice President — **Mar 2017 - Aug 2019**

**POSTECH Reader's Club 6**
(Awarded by Excellent Mentee) — **Feb 2018 - Dec 2019**
**POSTECH Reader's Club 5**

## Teaching

**KAIST Programming Practice (CS109)**
Teaching Assistant — **Mar 2025 - Present**

**KAIST Data Structure (CS206)**
Teaching Assistant — **Mar 2024 - Dec 2024**

**POSTECH Programming and Problem Solving (CSED101)**
Teaching Mentor — **Feb 2021 - Dec 2021**

## Volunteering

**KOICA WFK Korean Medicine Volunteer Group Overseas Medical Volunteer Activities** — **Dec 2023**
Krong Battambang, Cambodia

**KOICA WFK Korean Medicine Volunteer Group Overseas Medical Volunteer Activities** — **Aug 2019**
Tashkent, Uzbekistan

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