

RESEARCH INTEREST

My research lies at the intersection of **human–AI interaction** and **natural language processing**, with a focus on building and evaluating **interactive AI systems that collaborate effectively with people**. I pursue this through three complementary directions: (1) developing **user simulators** that model how people behave and evolve through interaction, enabling scalable evaluation and training of AI assistants; (2) designing **LLM evaluation** methods that measure AI capabilities in fine-grained, human-interpretable ways; and (3) building **adaptive AI systems** that tailor their support to users' contexts and evolving needs.

PROFESSIONAL EXPERIENCE

- University of Michigan

Ann Arbor, MI, USA

Postdoctoral Fellow, Computer Science and Engineering (Advisor: Q. Vera Liao)

Sept. 2025-Present

• Research on cognitively grounded user simulation, interactive evaluation, and oversight methods for human-agent interaction
- Adobe Research

San Jose, CA, USA

Research Intern (Mentor: Alexa F Siu, Tong Sun)

May – Sept. 2024

• Developed a multi-agent system that proactively assists users by anticipating user’s reading behavior [P7]
- Allen Institute for Artificial Intelligence (AI2)

Seattle, WA, USA

Research Intern (Mentor: Pao Siangliulue, Joseph Chee Chang, Jonathan Bragg, Kyle Lo)

May – Oct. 2023

• Built LLM-powered personalized recommendation systems by aligning model outputs with user context [C10]
• Developed benchmarks for evaluating LMs' ability to synthesize scientific literature into structured representations [C12]
- LG AI Research

Seoul, Republic of Korea

Research Intern (Mentor: Moontae Lee, Kyungjae Lee)

Nov. 2022 – Mar. 2023

• Developed evaluation benchmarks for LLM comprehension aligned with human understanding [C6]
- Electronics and Telecommunications Research Institute (ETRI)

Daejeon, Republic of Korea

Graduate Research Assistant (Mentor: Yunbae Kim, Seungken Park)

Mar. 2018 – Dec. 2019

• Developed ML-based probabilistic analysis methods for LTE spectral efficiency using measurement data [P1, P2, C1, C2]

EDUCATION

- KAIST

Daejeon, Republic of Korea

Ph.D. in Computer Science, Advisor: Juho Kim

Sept. 2020 – Aug. 2025

Dissertation Title: *Aligning AI Systems with Human Cognitive Processes for Knowledge Understanding*
- Ewha Womans University

Seoul, Republic of Korea

M.S. in Statistics. Advisor: Dongwan Shin

Mar. 2018 – Feb. 2020

B.S. Major in Mathematics Education, Minor in Statistics; *Magna Cum Laude*

Mar. 2014 – Feb. 2018

PUBLICATIONS

Conference and Journal Papers

- [C24] KnowSim: Evaluating Information Calibration in LLM Assistants with User Simulators that Learn

Yoonjoo Lee, Hyoungho Jin, Tae Soo Kim, Shaoyang Zhang, Philippe Laban, Q.Vera Liao

EMNLP 2026 Main: Conference on Empirical Methods in Natural Language Processing
- [C23] Investigating Assistant Bias in LLM User Simulators Using a Role Vector

Daeheon Jeong, Yoonjoo Lee, Eugene Choi, Sinie van der Ben, Juho Kim

EMNLP 2026 Finding: Conference on Empirical Methods in Natural Language Processing

- [C22] Cognitive Alignment: AI Should Align to How Humans Think**
Yoonjoo Lee, Philippe Laban, Nishant Balepur, Hariharan Subramonyam, Q.Vera Liao
Under review
- [C21] Reviving Code from Papers: Reimplementing HCI Artifacts**
 Eytan Adar, **Yoonjoo Lee**, Ning-Er Lei, Q.Vera Liao, Weirui Peng
UIST 2026: ACM Symposium on User Interface Software and Technology
- [C20] DISCOVERLLM: From Executing Intents to Discovering Them**
 Tae Soo Kim, **Yoonjoo Lee**, Jaesang Yu, John Joon Young Chung, Juho Kim
ICML 2026: International Conference on Machine Learning
- [C19] Evalet: Evaluating Large Language Models by Fragmenting Outputs into Functions**
 Tae Soo Kim*, Heechan Lee*, **Yoonjoo Lee**, Young-Ho Kim, Juho Kim
CHI 2026: ACM Conference on Human Factors in Computing Systems, Honorable Mention Award
- [C18] Mind the Blind Spots: A Focus-Level Evaluation Framework for LLM Reviews**
 Hyungyu Shin, Jingyu Tang, **Yoonjoo Lee**, Nayoung Kim, Hyunseung Lim, Ji Yong Cho, Hwajung Hong, Moontae Lee, Juho Kim
EMNLP 2025: Conference on Empirical Methods in Natural Language Processing, SAC Highlight Award
- [C17] PANORAMA: A Dataset and Benchmark Tasks Capturing the Evaluation Trails and Rationales in Patent Examination**
 Hyunseung Lim, Sooyohn Nam, Sungmin Na, Ji Yong Cho, June Yong Yang, Hyungyu Shin, **Yoonjoo Lee**, Juho Kim, Moontae Lee, Hwajung Hong
NeurIPS 2025: Conference on Neural Information Processing Systems
- [C16] "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
Under Review, 2026
- [C15] Compositional Stagewise Diffusion for Progressive Generation**
 Jaesang Yu, Seoyeon Byun, Tae Soo Kim, **Yoonjoo Lee**, Yilun Du, Juho Kim
Under Review, 2025
- [C14] CUPID: Evaluating Personalized and Contextualized Alignment of LLMs from Interactions**
 Tae Soo Kim, **Yoonjoo Lee**, Yoonah Park, Jiho Kim, Young-Ho Kim, Juho Kim
COLM 2025: Conference on Language Modeling
- [C13] ArxivDIGESTables: Synthesizing Scientific Literature into Tables using Language Models**
 Benjamin Newman*, **Yoonjoo Lee***, Aakanksha Naik, Pao Siangliulue, Raymond Fok, Juho Kim, Daniel S Weld, Joseph Chee Chang, Kyle Lo
EMNLP 2024 Main: Conference on Empirical Methods in Natural Language Processing
- [C12] The BiGGen Bench: A Principled Benchmark for Fine-grained Evaluation of Language Models with Language Models**
 Seungone Kim, Juyoung Suk, Ji Yong Cho, [18 authors], **Yoonjoo Lee**, [5 authors], Sean Welleck, Graham Neubig, Moontae Lee, Kyungjae Lee, Minjoon Seo
NAACL 2025: Conference of the North American Chapter of the Association for Computational Linguistics, Best Paper Award

- [C11] **One vs. Many: Comprehending Accurate Information from Multiple Erroneous and Inconsistent AI Generations**
Yoonjoo Lee, Kihoon Son, Tae Soo Kim, Jisu Kim, John Joon Young Chung, Eytan Adar, Juho Kim
FAccT 2024: ACM Conference on Fairness, Accountability, and Transparency
- [C10] **PaperWeaver: Enriching Topical Paper Alerts by Contextualizing Recommended Papers with User-collected Papers**
Yoonjoo Lee, Hyeonsu B Kang, Matt Latzke, Juho Kim, Jonathan Bragg, Joseph Chee Chang, Pao Siangliulue
CHI 2024: ACM Conference on Human Factors in Computing Systems
- [C9] **EvalLM: Interactive Evaluation of Large Language Model Prompts on User-Defined Criteria**
Tae Soo Kim, **Yoonjoo Lee**, Jamin Shin, Young-Ho Kim, Juho Kim
CHI 2024: ACM Conference on Human Factors in Computing Systems
- [C8] **VIVID: Human-AI Collaborative Authoring of Vicarious Dialogues from Lecture Videos**
Seulgi Choi, Hyewon Lee, **Yoonjoo Lee**, Juho Kim
CHI 2024: ACM Conference on Human Factors in Computing Systems
- [C7] **QASA: Advanced Question Answering on Scientific Articles**
Yoonjoo Lee^{*}, Kyungjae Lee^{*}, Sunghyun Park, Dasol Hwang, Jaehyeon Kim, Hong-in Lee, Moontae Lee
ICML 2023: International Conference on Machine Learning
- [C6] **Cells, Generators, and Lenses: Design Framework for Object-Oriented Interaction with Large Language Models**
Tae Soo Kim, **Yoonjoo Lee**, Minsuk Chang, Juho Kim
UIST 2023: ACM Symposium on User Interface Software and Technology
- [C5] **DAPIE: Interactive Step-by-Step Explanatory Dialogues to Answer Children’s Why and How Questions**
Yoonjoo Lee, Tae Soo Kim, Sundong Kim, Yohan Yun, Juho Kim
CHI 2023: ACM Conference on Human Factors in Computing Systems
- [C4] **Promptiverse: Scalable Generation of Scaffolding Prompts Through Human-AI Hybrid Knowledge Graph Annotation**
Yoonjoo Lee, John Joon Young Chung, Tae Soo Kim, Jean Y. Song, Juho Kim
CHI 2022: ACM Conference on Human Factors in Computing Systems
- [C3] **Personalizing Ambience and Illusionary Presence: How People Use “Study with Me” Videos to Create Effective Studying Environments**
Yoonjoo Lee, John Joon Young Chung, Jean Y. Song, Minsuk Chang, Juho Kim
CHI 2021: ACM Conference on Human Factors in Computing Systems
- [C2] **A Machine Learning Approach that meets Axiomatic Properties in Probabilistic Analysis of LTE Spectral Efficiency**
Yoonjoo Lee, Yunbae Kim, Seungken Park
ICTC, Oct. 2019
- [C1] **Probabilistic Analysis of Spectral Efficiency for LTE based on PDCCH Measurement Data**
Yoonjoo Lee, Yunbae Kim, Yeonkyu Park, Seungken Park
IEEE Communications Letters, vol. 23, no. 9, Sep. 2019

Extended Abstracts, Posters, and Workshop Papers

- [P7] **Reviving HCI: Agentic Reimplementation as Community Practice**
Yoonjoo Lee, Tae Soo Kim, Kevin Pu, Mira Dontcheva, Bjoern Hartmann, Toby Jia-Jun Li, Brad A Myers, Jeffrey Nichols, April Yi Wang, Xuhai Xu, Eytan Adar
UIST 2026 Adjunct Proceedings. Workshop Proposal
- [P6] **DocVoyager: Anticipating User's Information Needs and Guiding Document Reading through Question Answering**
Yoonjoo Lee, Nedim Lipka, Jack Wang, Puneet Mathur, Ryan Rossi, Tong Sun, Alexa F Siu
CHI 2025 Late-Breaking Work
- [P5] **The Fourth Workshop on Scholarly Document Processing**
Tirthankar Ghosal, Amanpreet Singh, Anita Waard, Philipp Mayr, Aakanksha Naik, Orion Weller, Yoonjoo Lee, Shannon Shen, Yanxia Qin
ACL 2024 Workshop Proposal
- [P4] **How to Reflect Diverse People's Perspectives in Large-Scale LLM-based Evaluations?**
Yoonjoo Lee, Tae Soo Kim, Juho Kim
CHI 2024 Workshop on Human-Centered Evaluation and Auditing of Large Language Models
- [P3] **LMCanvas: Object-Oriented Interaction to Personalize Large Language Model-Powered Writing Environments**
Tae Soo Kim, Arghya Sarkar, Yoonjoo Lee, Minsuk Chang, and Juho Kim
CHI 2023 Workshop on Generative AI and HCI
- [P2] **Interactive Children's Story Rewriting Through Parent-Children Interaction**
Yoonjoo Lee, Tae Soo Kim, Minsuk Chang, Juho Kim
ACL 2022 Workshop on Intelligent and Interactive Writing Assistant
- [P1] **XDesign: Integrating Interface Design into Explainable AI Education**
Hyungyu Shin, Nabila Sindi, Yoonjoo Lee, Jaeryoung Ka, Jean Y. Song, Juho Kim
SIGCSE TS 2022 Posters

Patents

Multiverse of Reading Paths: Anticipating User's Information Needs and Guiding Reading through Question Answering
Yoonjoo Lee, Nedim Lipka, Jack Wang, Puneet Mathur, Ryan Rossi, Tong Sun, Alexa F Siu.

SKILLS

ML Frameworks: Pytorch, Tensorflow

Languages: Python, HTML/CSS/JavaScript

LLM Research: Prompt engineering, LLM evaluation & benchmarking, fine-tuning, RLHF, user simulation

Data & Evaluation: Annotation pipeline design, crowdsourcing, data collection, experiment design

Research Methodologies: User study, human preference modeling, ML experiments, statistical analysis

HONORS, AWARDS, AND SCHOLARSHIPS

Honorable Mention, CHI	2026
Gold Reviewer Award, ICML	2026
Best Paper Award, NAACL	2025

SAC Highlight Award, EMNLP	2025
MIDAS Postdoctoral Affiliate, Michigan Institute for Data and AI in Society (MIDAS) <i>University of Michigan — Selected as one of up to 10 postdoctoral researchers</i>	2025
Best Presentation Award from SIGCHI Invited Papers Session <i>SIGCHI Korea Local Chapter</i>	2024
Research Assistant Scholarship <i>College of Natural Sciences, Ewha Womans University</i>	2019
Honors Scholarship <i>College of Education, Ewha Womans University</i>	2014, 2015, 2016, 2017
Dean's List <i>College of Education, Ewha Womans University</i>	2014, 2015, 2016, 2017

PROFESSIONAL SERVICES

Program Committee

- ARR March (Area Chair)
- CHI 2026 (Associate Chair, Outstanding Reviews), CHI LBW 2023

Workshop Organizer

- 2026 UIST Reviving HCI Agentic Reimplementation as Community Practice
- 2024 ACL Science Document Processing Workshop
- 2022 KAIST-Google ExploreCSR

Reviewer

- ACM CHI '22-'25, UIST '22-'26 (Outstanding Reviews), DIS '25, IUI '25, CSCW '23, C&C '22-'24, IEEE TLT '22
- ICLR '25, EMNLP '23-'25, ACL '23, ICML '26 (Gold Reviewer Award)

Student Volunteer

CHI 2022

INVITED TALKS

Cognitive Alignment: Building AI Systems That Empower Human Thinking

<i>Adobe Research</i>	June 2026
<i>Johns Hopkins University</i>	Apr. 2026

Simulating Human Cognitive Processes for Interactive Evaluation

<i>Invited Panelist, CSE 598: AI for Science, University of Michigan</i>	Nov. 2025
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Adaptive Knowledge Understanding Support: Aligning AI Systems with Human Cognitive Processes

<i>Guest Lecture, EECS 493: User Interface Development, University of Michigan</i>	Apr. 2026
<i>Purdue University</i>	Apr. 2025
<i>Pennsylvania State University</i>	March 2025
<i>Allen Institute for Artificial Intelligence (AI2)</i>	March 2025
<i>Apple MLR group</i>	March 2025
<i>CMU, Co-Augmentation, Learning, & AI (CoALA) Lab, WInE Lab</i>	Feb. 2025
<i>University of Pennsylvania</i>	Feb. 2025
<i>Center for Human-Computer Interaction at Virginia Tech</i>	Jan. 2025

Data Use in LLMs and Human-centered Evaluation

<i>Guest Lecture, CS475: Machine Learning for Natural Language Processing, KAIST</i>	Dec. 2024
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Personalizing AI Systems to Support How Humans Understand Knowledge

<i>Invited Talk at Google Explore CSR Journey of Research Workshop 2024</i>	Nov. 2024
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Teaching Models to Explain: Interactive Step-by-Step Dialogues for Children's Questions

<i>Invited Talk at HCI KOREA 2024: SIGCHI-Sponsored Top Conferences Session</i>	Jan. 2024
<i>Technical Talk at NAVER AI LAB</i>	Nov. 2023