

# Takyoung Kim

Ph.D. Student at the University of Illinois Urbana-Champaign (UIUC)

Thomas M. Siebel Center for Computer Science, 201 North Goodwin Avenue, Urbana, IL 61801

 [youngerous.github.io](https://github.com/youngerous)  [tk30@illinois.edu](mailto:tk30@illinois.edu)  [in/takyoung](https://www.linkedin.com/in/takyoung)  [Google Scholar](https://scholar.google.com/citations?user=QWzgkxUAAAAJ&hl=en)

## Interests

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My research interest lies in Natural Language Processing, Spoken Language Understanding, and Conversational AI. I am particularly interested in developing companion AI systems that can (1) understand social and cognitive context beyond the textual domain, (2) provide personalized and adaptive assistance, and (3) seamlessly interact within the physical world.

## Education

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**University of Illinois Urbana-Champaign, Urbana, IL, USA** ↗

Aug 2024 - Present

Doctor of Philosophy, Computer Science

Advisor: Dilek Hakkani-Tür

**Korea University, Seoul, South Korea** ↗

Sep 2020 - Aug 2022

Master of Engineering, Industrial Management Engineering

Advisor: Pilsung Kang (currently at Seoul National University)

Thesis: *Relaxing Unrealistic Assumptions of Dataset and Evaluation Metric in Dialogue State Tracking*

**Sungkyunkwan University, Seoul, South Korea** ↗

Mar 2013 - Aug 2020

Bachelor of Science in Engineering, Interdisciplinary Program of Convergent Software

Bachelor of Media & Communication (*Leave of absence for military service: Feb 2015 - Nov 2016*)

## Research Experience

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**Amazon Alexa AI | Conversational Assistant Modeling and Learning** *Bellevue, WA, USA* ↗

May 2025 - Aug 2025

Applied Scientist Intern (Mentors: Jinseok Nam, Chandrayee Basu, Chengyuan Ma)

Worked on error recovery in conversational systems with realistic constraints [2]

**University of Illinois Urbana-Champaign | Conversational AI Lab** *Urbana, IL, USA* ↗

Aug 2024 - Present

Graduate Research Assistant (Advisor: Dilek Hakkani-Tür)

Working on cognitive interactions in real-world environments

**Korea University | Data Science & Business Analytics Lab** *Seoul, South Korea* ↗

Apr 2024 - Jul 2024

Research Associate (Advisor: Pilsung Kang)

Worked on retrieval-augmented language models specialized in Korean digital media

**LG AI Research | Advanced Machine Learning Lab** *Seoul, South Korea* ↗

Apr 2023 - Mar 2024

Research Scientist Intern (Mentors: Kyungjae Lee, Moontae Lee)

Worked on improving long-form responses of retrieval-augmented language models via planning [6]

**NAVER AI Lab | Language Research Team** *Seongnam, South Korea* ↗

Jul 2022 - Jan 2023

Research Scientist Intern (Mentor: Sungdong Kim)

Worked on revealing innate bias in task-oriented dialogue research via interactive study [7]

Worked on constructing safety benchmark for sensitive questions [10] and social biases [9]

**Korea University | Data Science & Business Analytics Lab** *Seoul, South Korea* ↗

Sep 2020 - Jun 2022

Graduate Research Assistant (Advisor: Pilsung Kang)

Jan 2020 - Aug 2020

Undergraduate Intern

Worked on analyzing realistic biases and limitations of dialogue state tracking [12, 11, 8]

Developed algorithms and pipelines in various domains, such as news [13], car, and ocean waves

## Preprints &amp; Under Review

- [1] **AURA: A Diagnostic Framework for Tracking User Satisfaction of Interactive Planning Agents**   
Takyoung Kim\*, Janvijay Singh\*, Shuhaiib Mehri\*, Emre Can Acikgoz, Sagnik Mukherjee, Nimet Beyza Bozdag, Sumuk Shashidhar, Gokhan Tur, Dilek Hakkani-Tür  
*Workshop on Multi-Turn Interactions in Large Language Models* MTI-LLM, NeurIPS 2025  
*Preprint Under Review*

## Published Papers

- [2] **ReIn: Conversational Error Recovery with Reasoning Inception**   
Takyoung Kim, Jinseok Nam, Chandrayee Basu, Xing Fan, Chengyuan Ma, Heng Ji, Gokhan Tur, Dilek Hakkani-Tür  
*International Conference on Learning Representations* ICLR 2026
- [3] **Goal Alignment in LLM-Based User Simulators for Conversational AI**   
Shuhaiib Mehri, Xiaocheng Yang, Takyoung Kim, Gokhan Tur, Shikib Mehri, Dilek Hakkani-Tür  
*Transactions of the Association for Computational Linguistics* TACL 2026
- [4] **TD-EVAL: Revisiting Task-Oriented Dialogue Evaluation by Combining Turn-Level Precision with Dialogue-Level Comparisons**   
Emre Can Acikgoz\*, Carl Guo\*, Suvodip Dey\*, Akul Datta, Takyoung Kim, Gokhan Tur, Dilek Hakkani-Tür  
*Annual Meeting of the Special Interest Group on Discourse and Dialogue (Oral Presentation)* SIGDIAL 2025
- [5] **Premise-Augmented Reasoning Chains Improve Error Identification in Math Reasoning with LLMs**   
Sagnik Mukherjee\*, Abhinav Chinta\*, Takyoung Kim, Tarun Anoop Sharma, Dilek Hakkani-Tür  
*International Conference on Machine Learning* ICML 2025
- [6] **Learning to Explore and Select for Coverage-Conditioned Retrieval-Augmented Generation**   
Takyoung Kim, Kyungjae Lee, Young Rok Jang, Ji Yong Cho, Gangwoo Kim, Minseok Cho, Moontae Lee  
*Nations of the Americas Chapter of the Association for Computational Linguistics* Findings of NAACL 2025
- [7] **Revealing User Familiarity Bias in Task-Oriented Dialogue via Interactive Evaluation**   
Takyoung Kim, Jamin Shin, Young-Ho Kim, Sanghwan Bae, Sungdong Kim  
*Workshop on NLP for Conversational AI (Oral Presentation, Best Paper Award)* NLP4ConvAI, ACL 2024
- [8] **DSTEa: Improving Dialogue State Tracking via Entity Adaptive Pre-training**   
Yukyung Lee, Takyoung Kim, Hoonsang Yoon, Pilsung Kang, Junseong Bang, Misuk Kim  
*Knowledge-Based Systems (Q1, Impact Factor: 8.8)* KBS 2024  
*Workshop on Knowledge Augmented Methods for NLP* KnowledgeNLP, KDD 2023
- [9] **KoSBI: A Dataset for Mitigating Social Bias Risks Towards Safer Large Language Model Applications**   
Hwaran Lee\*, Seokhee Hong\*, Joonsuk Park, Takyoung Kim, Gunhee Kim, Jung-Woo Ha  
*Annual Meeting of the Association for Computational Linguistics (Industry Track)* ACL 2023
- [10] **SQuARe: A Large-Scale Dataset of Sensitive Questions and Acceptable Responses Created Through Human-Machine Collaboration**   
Hwaran Lee\*, Seokhee Hong\*, Joonsuk Park, Takyoung Kim, Meeyoung Cha, Yejin Choi, Byoungpil Kim, Gunhee Kim, Eun-Ju Lee, Yong Lim, Alice Oh, Sangchul Park, Jung-Woo Ha  
*Annual Meeting of the Association for Computational Linguistics (Oral Presentation, Best Paper Nomination)* ACL 2023
- [11] **Oh My Mistake!: Toward Realistic Dialogue State Tracking including Turnback Utterances**   
Takyoung Kim, Yukyung Lee, Hoonsang Yoon, Pilsung Kang, Junseong Bang, Misuk Kim  
*Towards Semi-Supervised and Reinforced Task-Oriented Dialog Systems* SereTOD, EMNLP 2022
- [12] **Mismatch between Multi-turn Dialogue and its Evaluation Metric in Dialogue State Tracking**   
Takyoung Kim, Hoonsang Yoon, Yukyung Lee, Pilsung Kang, Misuk Kim  
*Annual Meeting of the Association for Computational Linguistics (Short)* ACL 2022
- [13] **Building an Integrated Framework of Korean Text Summarization and Text-to-Speech**   
Takyoung Kim, Jina Kim, Hyeongwon Kang, Subin Kim, Pilsung Kang  
*Journal of Korean Institute of Industrial Engineers* JKIIE 2022

## Presentations and Talks

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### Data-Driven Approaches to Personalizing Spoken Interaction in Conversational AI

*Seoul National University (Seoul, South Korea), Host: Pilsung Kang  
Hanyang University (Seoul, South Korea), Host: Misuk Kim*

Dec 2025  
Dec 2025

### Explainable and Efficient Turn-Taking Strategies for Full-Duplex Conversational AI

*TTIC Summer Workshop on Foundations of Speech and Audio Foundation Models (Chicago, IL, USA)*

Sep 2025

### Embodied Multi-Agent Planning in Conflicting Scenarios

*Midwest Speech and Language Days (Notre Dame, IN, USA)*

Apr 2025

## Honors and Awards

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**CS PhD Fellowship** University of Illinois Urbana-Champaign

Aug 2024 - May 2025

**Best Paper Award** ACL 2024 Workshop on NLP for Conversational AI [7]

Aug 2024

**Best Student Feedback Award, Research Ideation Competition** Korea University

Feb 2021, Dec 2021

**2nd Place (2,500 USD), MyData Acting Hackathon** Ministry of Science and ICT

Oct 2019

**Merit-based Scholarship, Computer Science Coursework** Sungkyunkwan University

Spring 2018, Fall 2018

## Teaching Experience

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**CS598 Conversational AI** University of Illinois Urbana-Champaign

Spring 2026

*Teaching Assistant (Instructor: Dilek Hakkani-Tür)*

**T02459101 Natural Language Processing** Hankuk University of Foreign Studies

Spring 2024

*Teaching Assistant (Instructor: Yukyung Lee)*

**Industrial Machine Learning** LG Electronics

Spring 2022

*Head Teaching Assistant (Instructor: Pilsung Kang)*

**Research Mentoring** Hyundai Mobis

Summer 2021

*Research Project Assistant (Instructor: Pilsung Kang)*

**Industrial Machine Learning and Deep Learning** LG Innotek, SK Hynix

Summer 2021

*Teaching Assistant (Instructor: Pilsung Kang)*

## Academic Service

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### Conference Reviewer

International Conference on Machine Learning (ICML)

2026

IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)

2026

International Conference on Learning Representations (ICLR)

2026

Asia-Pacific Chapter of the Association for Computational Linguistics (AACL)

2025

Conference on Language Modeling (COLM)

2025-2026

Annual Meeting of the Association for Computational Linguistics (ACL)

2025-2026

Nations of the Americas Chapter of the Association for Computational Linguistics (NAACL)

2025

European Chapter of the Association for Computational Linguistics (EACL)

2024 - 2026

Empirical Methods in Natural Language Processing (EMNLP)

2023 - 2025

Neural Information Processing Systems (NeurIPS)

2022 - 2025

<b>Journal Reviewer</b>		
Knowledge-Based Systems		2023 - 2024
<b>Workshop Reviewer</b>		
Workshop on Multi-Turn Interactions in Large Language Models @ NeurIPS		2025
<b>Other Reviewer</b>		
ACL Rolling Review (ARR)		2023 - Present
<b>Organizer</b>		
Midwest Speech and Language Days		2026
<b>Student Volunteer (On-Site)</b>		
Nations of the Americas Chapter of the Association for Computational Linguistics (NAACL)		2025