Takyoung Kim

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

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Interests

My research interest lies in the intersection of Natural Language Processing and Communication. I am particularly interested in building communicative language models (LMs) that can understand social and cognitive context, evaluating preference during interaction, and exploring how LMs compose knowledge both from parametric and external sources.

Education

University of Illinois, Urbana-Champaign, *Urbana, IL, USA* ↗   Sep 2024 - Present
Doctor of Philosophy, Computer Science

Korea University, *Seoul, South Korea* ↗   Sep 2020 - Aug 2022
Master of Engineering, Industrial Management Engineering
Advisor: Pilsung Kang
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)*

Publications   P=Preprint, C=Conference, W=Workshop, J=Journal, *=Equal Contribution

[1] **DSTEA: Improving Dialogue State Tracking via Entity Adaptive Pre-training** 📄
Yukyung Lee, <u>Takyoung Kim</u>, 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

[2] **KoSBi: A Dataset for Mitigating Social Bias Risks Towards Safer Large Language Model Applications** 📄 </>
Hwaran Lee*, Seokhee Hong*, Joonsuk Park, <u>Takyoung Kim</u>, Gunhee Kim, Jung-Woo Ha
Annual Meeting of the Association for Computational Linguistics (Industry Track)   ACL 2023

[3] **SQuARe: A Large-Scale Dataset of Sensitive Questions and Acceptable Responses Created Through Human-Machine Collaboration** 📄 </>
Hwaran Lee*, Seokhee Hong*, Joonsuk Park, <u>Takyoung Kim</u>, 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, Best Paper Nomination)   ACL 2023

[4] **Development of a Framework for Road Test Score Prediction and Significant Keywords Extraction based on Vehicle Specification Data** 📄
YongGi Jeong, Kyoosung So, <u>Takyoung Kim</u>, Jina Kim, Seungwan Seo, Seonggye Lee, Sunwoo Kim, Pilsung Kang
Journal of Korean Institute of Industrial Engineers   JKIIE 2023

[5] **Oh My Mistake!: Toward Realistic Dialgoue State Tracking including Turnback Utterances** 📄
<u>Takyoung Kim</u>, Yukyung Lee, Hoonsang Yoon, Pilsung Kang, Junseong Bang, Misuk Kim
Towards Semi-Supervised and Reinforced Task-Oriented Dialog Systems   SereTOD, EMNLP 2022

[6] **Mismatch between Multi-turn Dialogue and its Evaluation Metric in Dialogue State Tracking** 📄
<u>Takyoung Kim</u>, Hoonsang Yoon, Yukyung Lee, Pilsung Kang, Misuk Kim
Annual Meeting of the Association for Computational Linguistics (Short)   ACL 2022

[7] **Building an Integrated Framework of Korean Text Summarization and Text-to-Speech** 📄 </>
<u>Takyoung Kim</u>, Jina Kim, Hyeongwon Kang, Subin Kim, Pilsung Kang
Journal of Korean Institute of Industrial Engineers   JKIIE 2022

Preprint & Under Review

[8] **Revealing User Familiarity Bias in Task-Oriented Dialogue via Interactive Evaluation** 📄
<u>Takyoung Kim</u>, Jamin Shin, Young-Ho Kim, Sanghwan Bae, Sungdong Kim
Preprint

Research Experience

LG AI Research | Advanced Machine Learning Lab, *Seoul, South Korea* ↗   Apr 2023 - Present
Research Intern (Mentors: Kyungjae Lee, Moontae Lee)
Working on enhancing long-form response quality of large language models via planning

NAVER AI Lab | Language Research Team, *Seongnam, South Korea* ↗   Jul 2022 - Jan 2023
Research Intern (Mentor: Sungdong Kim)
Worked on revealing innate bias in task-oriented dialogue research via interactive study [8]
Worked on constructing safety benchmark for sensitive questions [3] and social biases [2]

Korea University | Data Science & Business Analytics Lab, *Seoul, South Korea* ↗   Sep 2020 - Jun 2022
Research Assistant (Advisor: Pilsung Kang)
Worked on analyzing realistic biases and limitations of dialogue state tracking [6, 5, 1]
Developed algorithms and pipelines in various domains, such as news [7], car [4] and ocean waves

Korea University | Data Science & Business Analytics Lab, *Seoul, South Korea* ↗   Jan 2020 - Aug 2020
Undergraduate Research Intern (Advisor: Pilsung Kang)
Designed spatial/temporal architecture reflecting optical flow for video deepfake detection

Presentations and Talks

Selective Masking for Task-Adaptive Pre-Training
Korean Institute of Industrial Engineers Conference (Spring)   Jun 2021

A Life of Turning into Software
Software Edu Fest, Naver Connect Foundation   Jul 2020

Honors and Awards

Research Ideation Contest | Best Student Feedback Award   Korea University   Feb 2021, Dec 2021
MyData Acting Hackathon | The Grand Prize (2nd Place, 2,500$)   Ministry of Science and ICT   Oct 2019
Merit-based Scholarship | Computer Science Coursework   Sungkyunkwan University   Spring 2018, Fall 2018

Teaching Experience

T02459101 - Natural Language Processing   Hankuk University of Foreign Studies   Feb 2024 - Present
Teaching Assistant (Instructor: Yukyung Lee)

Industrial Machine Learning   LG Electronics   Jan 2022 - Apr 2022
Head Teaching Assistant (Instructor: Pilsung Kang)

Research Mentoring   Hyundai Mobis   Jul 2021 - Sep 2021
Research Project Assistant (Instructor: Pilsung Kang)

Industrial Machine Learning and Deep Learning   LG Innotek, SK Hynix   Jul 2021 - Aug 2021
Teaching Assistant (Instructor: Pilsung Kang)

Academic Service

Conference Reviewer   NeurIPS Datasets & Benchmarks (2022-23), EMNLP (2023), EMNLP Industry Track (2023), EACL (2024)

Journal Reviewer   Knowledge-Based Systems (2023)

Others   ACL Rolling Review (2023-24)