

Hyukkyu Kang

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Summary

I am a Ph.D. Candidate in the [Data Systems Lab](#) at [Pohang University of Science and Technology \(POSTECH\)](#). I am doing research under the supervision of Professor [Wook-Shin Han](#). My research interests are in the area of Natural Language Processing (NLP) and Information Retrieval (IR). I got my B.S. degree in Computer Science and Engineering from POSTECH.

Education

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|--|-----------------------|
| Pohang University of Science and Technology <i>Ph.D. in Computer Science and Engineering (M.S./Ph.D. integration)</i> | Sep. 2019 – Present |
| Pohang University of Science and Technology <i>B.S. in Computer Science and Engineering</i> | Feb. 2015 – Aug. 2019 |

Work Experience

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|---|-----------------------|
| Visiting Scholar <i>Global AI Frontier Lab, New York University</i> | Jan. 2025 – Mar. 2025 |
| <ul style="list-style-type: none"> Collaborated with Prof. Kyunghyun Cho on the topic “Disentangling Reasoning and Knowledge in Retrieval-Augmented Language Models” | |
| Research Intern <i>Database Lab, POSTECH</i> | Dec. 2018 – Aug. 2019 |
| <ul style="list-style-type: none"> Researched Natural Language Interface to Databases (NLIDB) | |
| Research Intern <i>Center of Netmarble AI Revolution, Netmarble Company</i> | June 2018 – Aug. 2018 |
| <ul style="list-style-type: none"> Developed AI player for a real-time strategy game using reinforcement learning | |

Publications

Hyukkyu Kang, Injung Kim, Wook-Shin Han. TRIAL: Token Relations and Importance Aware Late-interaction for Accurate Text Retrieval. In Proc., the 2025 Conference on Empirical Methods in Natural Language Processing (EMNLP) 2025.

Projects

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|--|-----------------------|
| AI Guardians: Development of Robust, Controllable, and Unbiased Trust-worthy AI Technology <i>Supported by Institute of Information & communications Technology Planning & Evaluation (IITP) grant funded by the Korea government (MSIT) (No. RS-2024-00509258, Global AI Frontier Lab)</i> | Jul. 2024 – Present |
| <ul style="list-style-type: none"> Developing RAQUEL: Robust Validation of Machine Unlearning through Query Executions over an Aligned Database | |
| Knowledge Graph Construction for Knowledge Inference <i>Supported by Samsung SDS</i> | May 2020 - Oct. 2020 |
| <ul style="list-style-type: none"> Developed an end-to-end system to construct knowledge graphs from raw document corpora, structuring domain knowledge for downstream applications | |
| Development of a Conversational, Self-tuning DBMS <i>Supported by Institute of Information communications Technology Planning Evaluation(IITP) grant funded by the Korea government(MSIT) (No. 2018-0-01398)</i> | Sep. 2019 - Dec. 2024 |
| <ul style="list-style-type: none"> Developed a deep learning-based text-to-SQL semantic parsing model that can serve as a natural language interface to database systems | |

Activities

Global Leadership Program (GLP) *Computer Vision Lab, POSTECH* Feb. 2017 - Dec. 2017

- Researched real-time object detection & tracking

Postech Laboratory for Unix Security (PLUS) June 2015 – Dec. 2017

- Studied linux system vulnerability and participated in various CTFs (e.g., DEFCON CTF 2017)

Teaching Assistant

CSED 273 Digital System Design, POSTECH Spring 2020

CSED 312 Operating System, POSTECH Fall 2019

Technologies

Programming Languages: C/C++, Python, Scala, Java, JavaScript

Libraries & Software: PyTorch, TensorFlow, Databases, React

Communication language: Korean, English, Chinese