Philhoon **Oh**

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Research Interest

My research interests are primarily centered on developing reliable Large Language Models (LLMs) for users. I believe that any form of communication be represented as 'Query' + 'External Knowledge' = 'Response'. With this belief, I have focused on developing a robust LLM reader within the Retrieval Augmented Generation (RAG) pipeline to effectively incorporate external knowledge. Additionally, I am expanding my interests to explore the efficient application of LLMs across diverse domains, including multi-modal and tabular data. My methods of focus include prompting, In-Context Learning (ICL), and leveraging external knowledge sources.

Education

Korea Advanced Institute of Science and Technology — *Seoul, S.Korea*

M.S. in Artificial Intelligence — *Mar. 2023 - Feb. 2025*

Advisor: James Thorne, Co-Advisor: Jinwoo Shin

University of California, Berkeley — *Berkeley, CA USA*

B.A. in Statistics — *Aug. 2012 - Aug. 2017*

Publications

Parallel Key-Value Cache Fusion for Position Invariant RAG — *Arxiv*

Philhoon Oh, Jinwoo Shin and James Thorne — *Dec. 2024*

- Currently Under Review - ARR

CLIcK: A Benchmark Dataset of Cultural and Linguistic Intelligence in Korean — *LREC-COLING 2024*

Eunsu Kim, Juyoung Suk, **Philhoon Oh**, Haneul Yoo, James Thorne and Alice Oh — *Feb. 2024*

- In the 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation, 2024

Detrimental Contexts in Open-Domain Question Answering — *EMNLP Findings*

Philhoon Oh, and James Thorne — *Sep. 2023*

- In The 2023 Conference on Empirical Methods in Natural Language Processing, 2023

Knowledge Corpus Error in Question Answering — *EMNLP Findings*

Yejoon Lee, **Philhoon Oh**, and James Thorne — *Sep. 2023*

- In The 2023 Conference on Empirical Methods in Natural Language Processing, 2023

Work Experience

NAVER Corp — *Gyeonggi-do, S.Korea*

Research Intern — *Jan. 2024 - Feb. 2024*

- Designed a pipeline to generate datasets to train Korean evaluation models.
- Refined the evaluation model, achieving a Pearson Correlation of 0.846, compared to the baseline of 0.698

SK Inc. C&C — *Gyeonggi-do, S.Korea*

NLP Engineer & PL — *Jan. 2019 - Feb. 2022*

- Developed NLP framework based on Pytorch for various NLP models and subsequent tasks.
- Designed pipelines for NLP tasks including MRC, ODQA, Keyword Extraction.
- Implemented automated pipeline for Korean Text Crawling and Pre-processing.
- Led NLP Keyword Extraction project.

Anemone Boutique LLC — *Santa Monica, CA USA*

Marketing Analyst — *Oct. 2017 - Mar. 2018*

- Analyzed the impacts of different marketing strategies.
- Implemented time series analysis (SARIMA) on previous quarters data to predict future sales.

Teaching Experience

ChatGPT Project

Seoul, S.Korea

Graduate Student Advisor — *Feb. 2023 - Dec. 2023*

- Conducted research on how ChatGPT works with non-English languages advised by *James Thorne* and *Alice Oh*.
- Mentored undergraduate students at KAIST on ChatGPT and fundamental NLP research topics.
- Led and guided undergraduate students in a research project; paper accepted at LREC-COLING 2024.

Projects

Korean ODQA Project

Gyeonggi-do, S.Korea

NLP Engineer — *Jul. 2021 - Dec. 2021*

- Developed a Korean ODQA (Open Domain Question Answering) feature.
- Achieved performance improvements on datasets, including Korquad v1, AI common sense, and the XX hospital dataset.

Chatbot PoC

Gyeonggi-do, S.Korea

NLP Engineer — *Jul. 2021 - Sep. 2021*

- Demonstrated the Open-Domain Question Answering (ODQA) feature to one of the largest hospitals in Korea
- The ODQA feature was integrated as an NLP feature through a PoC.

Survey Project

Gyeonggi-do, S.Korea

NLP Engineer & PL — *Jul. 2021 - Aug. 2021*

- Developed a survey feedback tool for the SK SUPEX Council (Consultative Panel within SK Group).
- Implemented the Keyword Extractor module to collect feedback from anonymous ethical surveys.

NLP Framework

Gyeonggi-do, S.Korea

NLP Engineer — *Jan. 2021 - Jun. 2021*

- Participated in developing an integrated NLP framework based on PyTorch.
- Designed a new architecture to support various NLP models based on tasks and features.
- Developed unit tests for the framework using the pytest module.

Honors & Awards

2023 **2nd Place**, 2023 AI Graduate School Challenge — *Korea Ministry of Science and ICT*

2023 **KAIST Scholarship**, Student Support Scholarship for Kim Jaechul Graduate School of AI — *KAIST*

2017 **Manga Cum Laude**, High Distinction in General Scholarship at graduation — *UC Berkeley*