

Sunkyung Lee

Sungkyunkwan University (SKKU), Suwon-si, Gyeonggi-do, Republic of Korea

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Research Interests

I am primarily interested in Information Retrieval, especially focusing on sparse retrieval and generative retrieval. My research interests lie in the fields of data mining and natural language processing in real-world applications.

Education

Sungkyunkwan University

PH.D., DEPARTMENT OF ARTIFICIAL INTELLIGENCE

- Advisor: Prof. Jongwuk Lee

Republic of Korea

Mar 2023 – present

Sungkyunkwan University

M.S., DEPARTMENT OF ARTIFICIAL INTELLIGENCE

- Thesis: A Dual Document Encoder Based on Sparse Representations for First-stage Retrieval
- Advisor: Prof. Jongwuk Lee

Republic of Korea

Mar 2021 – Feb 2023

Sungkyunkwan University

B.S., DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

- Project: Data Augmentation Methods for Improving the Performance of Machine Reading Comprehension
- Advisor: Prof. Jongwuk Lee

Republic of Korea

Mar 2017 – Feb 2021

B.A., DEPARTMENT OF GLOBAL ECONOMICS

Mar 2017 – Feb 2021

Publications

INTERNATIONAL CONFERENCES

Eunseong Choi, **Sunkyung Lee**, Minjin Choi, June Park, Jongwuk Lee, From Reading to Compressing: Exploring the Multi-document Reader for Prompt Compression. The 2024 Conference on Empirical Methods in Natural Language Processing (EMNLP findings). 2024 (To appear)

Hyunsoo Kim*, Junyoung Kim*, Minjin Choi, **Sunkyung Lee** and Jongwuk Lee, MARS: Matching Attribute-aware Representations for Text-based Sequential Recommendation. The 33rd ACM International Conference on Information and Knowledge Management (CIKM, short paper). 2024 (*: equal contribution)

Sunkyung Lee*, Minjin Choi*, Jongwuk Lee, GLEN: Generative Retrieval via Lexical Index Learning. The 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP). 2023 (*: equal contribution)

Hye-young Kim*, Minjin Choi*, **Sunkyung Lee**, Eunseong Choi, Young-In Song, Jongwuk Lee, ConQueR: Contextualized Query Reduction using Search Logs. The 46th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR, short paper). 2023 (*: equal contribution)

Eunseong Choi*, **Sunkyung Lee***, Minjin Choi, Hyeseon Ko, Young-In Song, Jongwuk Lee, SpaDE: Improving Sparse Representations using a Dual Document Encoder for First-stage Retrieval. The 31st ACM International Conference on Information and Knowledge Management (CIKM). 2022 (*: equal contribution)

Minjin Choi, **Sunkyung Lee**, Eunseong Choi, Heesoo Park, Junhyuk Lee, Dongwon Lee, Jongwuk Lee, MeLBERT: Metaphor Detection via Contextualized Late Interaction using Metaphorical Identification Theories. Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL). 2021,

DOMESTIC CONFERENCES

Jiwoo Kim, **Sunkyung Lee**, Eunseong Choi, and Jongwuk Lee. Pseudo-sentence Representation for Math Word Solving Problem. Korea Computer Congress (KCC), 2022 (Best presentation paper)

Sunkyung Lee, Seonho Jeong, Jongwuk Lee, Data Augmentation Methods for Improving the Performance of Machine Reading Comprehension, *Korea Software Congress (KSC)*, 2020 (Best paper)

DOMESTIC JOURNALS

Sunkyung Lee, Eunseong Choi, Seonho Jeong, Jongwuk Lee, Data Augmentation Methods for Improving the Performance of Machine Reading Comprehension, *Journal of KIISE*, 2021

Professional Experience

2021 **Research Intern**, NAVER Search CIC, NAVER Corp., Republic of Korea

Honors and Awards

2023	2nd place (Minister Award) , 6th AI Grand Challenge Stage II: Policy Support AI	IITP
2023	4th place (Minister Award) , 6th AI Grand Challenge Stage I: Policy Support AI	IITP
2022	1st place (Minister Award) , 5th AI Grand Challenge Stage III: Math Word Problem Solving	IITP
2022	Best Presentation Paper Award , Korea Computer Congress	KIISE
2021	Grand Prize (2nd prize) , SKKU Graduate Student Paper Awards (2/200 teams)	SKKU
2021	3rd Prize (Minister Award) , 5th AI Grand Challenge Stage II: Math Word Problem Solving	IITP
2020	Best Paper Award , Korea Software Congress	KIISE

Scholarships

2023-2025	Daesang Foundation Scholarship , Daesang Foundation, Republic of Korea	Full tuition
2021-2023	Graduate School Scholarship , Sungkyunkwan University, Republic of Korea	

Presentations

Data Intelligence Workshop 2024 @ Database Society of Korea *Sokcho, Republic of Korea*
PRESENTER IN POSTER SESSION *Jul. 2024*

- Introduced the paper "GLEN: Generative Retrieval via Lexical Index Learning", EMNLP (2023)

Korea Computer Congress 2024 *Jeju, Republic of Korea*
PRESENTER IN TOP CONFERENCE SESSION (ORAL) *Jun. 2024*

- Introduced the paper "GLEN: Generative Retrieval via Lexical Index Learning", EMNLP (2023)

SKKU AI Colloquium 2023 *Suwon-si, Republic of Korea*
PRESENTER IN POSTER SESSION *Sep. 2023*

- Introduced the paper "SpaDE: Improving Sparse Representations using a Dual Document Encoder for First-stage Retrieval", CIKM (2022)

Korea Software Congress 2022 *Jeju, Republic of Korea*
PRESENTER IN TOP CONFERENCE SESSION (ORAL) *Dec. 2022*

- Introduced the paper "SpaDE: Improving Sparse Representations using a Dual Document Encoder for First-stage Retrieval", CIKM (2022)

Teaching Experience

REGULAR COURSES

2023	Introduction to Recommender Systems , Teaching Assistant	SKKU
2022	Fundamentals of Machine Learning , Teaching Assistant	SKKU
2021	Fundamentals of Machine Learning , Teaching Assistant	SKKU
2022	Introduction to Database , Teaching Assistant	SKKU
2021	Introduction to Database , Teaching Assistant	SKKU

EXTRACURRICULAR COURSES

- 2022 **Machine Learning, Manufacture AI Leader Course, LG Electronics**, Teaching Assistant
- 2022 **Machine Learning, Software Architecture Course, Samsung SDS**, Teaching Assistant
- 2021 **Machine Learning, Manufacture AI Leader Course, LG Electronics**, Teaching Assistant

Reference

Jongwuk Lee, Associate professor, Sungkyunkwan University, jongwuklee@skku.edu