

# Sunkyung Lee

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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

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

## Professional Experience

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

## Honors and Awards

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

## Scholarships

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

## Presentations

<b>Data Intelligence Workshop 2024 @ Database Society of Korea</b>	Sokcho, Republic of Korea
PRESENTER IN POSTER SESSION	Jul. 2024
• Introduced the paper “GLEN: Generative Retrieval via Lexical Index Learning”, EMNLP (2023)	
<b>Korea Computer Congress 2024</b>	Jeju, Republic of Korea
PRESENTER IN TOP CONFERENCE SESSION (ORAL)	Jun. 2024
• Introduced the paper “GLEN: Generative Retrieval via Lexical Index Learning”, EMNLP (2023)	
<b>SKKU AI Colloquium 2023</b>	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)	
<b>Korea Software Congress 2022</b>	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	<b>Introduction to Recommender Systems</b> , Teaching Assistant	SKKU
2022	<b>Fundamentals of Machine Learning</b> , Teaching Assistant	SKKU
2021	<b>Fundamentals of Machine Learning</b> , Teaching Assistant	SKKU
2022	<b>Introduction to Database</b> , Teaching Assistant	SKKU
2021	<b>Introduction to Database</b> , 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

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