

Namkyeong Lee

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RESEARCH INTEREST

Applied Machine Learning

By leveraging the power of Machine Learning, I'm interested in bringing insights and advancements to various scientific fields, including chemistry, biology, and more.

- Graph Neural Networks for Chemistry and Biology
- Graph Representation Learning

EDUCATION

KAIST (Korea Advanced Institute of Science and Technology)

- Ph.D. in Industrial and Systems Engineering
• Research Interest: Graph Representation Learning, AI4Science
• Advisor: [Prof. Chanyoung Park](#)

Mar 2023 – Present

KAIST (Korea Advanced Institute of Science and Technology)

- M.S. in Industrial and Systems Engineering
• GPA: 3.85/4.3
• Research Interest: Graph Representation Learning, Graph Mining
• Advisor: [Prof. Chanyoung Park](#)

Mar 2021 – Feb 2023

Korea University

- B.S. in Industrial Management Engineering
• GPA: 3.9/4.5
• Dean's List (Spring 2021)

Mar 2015 – Feb 2021

WORK EXPERIENCE

NAVER

Seongnam, Korea

- Research Intern
- Project: Learning Continual User Representation for Recommendation

Dec 2022 – Feb 2023

AISoftKorea

Seoul, Korea

- Co-founder of an AI-based legal counseling startup company.
- AI model for providing qualified answers to Korean legal questions.

Jun 2020 – Mar 2021

PUBLICATIONS

(†: Equal contribution)

CONFERENCES

- [C8] Shift-Robust Molecular Relational Learning with Causal Substructure
Namkyeong Lee, Kanghoon Yoon, Gyoung S. Na, Sein Kim, Chanyoung Park
ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD 2023**)
- [C7] Task Relation-aware Continual User Representation Learning
Sein Kim, **Namkyeong Lee**, Donghyun Kim, Min-Chul Yang, Chanyoung Park
ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD 2023**)
- [C6] Task-Equivariant Graph Few-shot Node Classification
Sungwon Kim, Junseok Lee, **Namkyeong Lee**, Wonjoong Kim, Seungyeon Choi, Chanyoung Park
ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD 2023**)
- [C5] Conditional Graph Information Bottleneck for Molecular Relational Learning
Namkyeong Lee, Dongmin Hyun, Gyoung S. Na, Sungwon Kim, Junseok Lee, Chanyoung Park
International Conference on Machine Learning (**ICML 2023**)
- [C4] Heterogeneous Graph Learning for Multi-modal Medical Data Analysis
Sein Kim, **Namkyeong Lee**, Junseok Lee, Dongmin Hyun, Chanyoung Park
AAAI Conference on Artificial Intelligence (**AAAI 2023 Oral Presentation**)
- [C3] Relational Self-Supervised Learning on Graphs
Namkyeong Lee, Dongmin Hyun, Junseok Lee, Chanyoung Park
ACM International Conference on Information and Knowledge Management (**CIKM 2022**)

- [C2] GraFN: Semi-Supervised Node Classification on Graph with Few Labels via Non-Parametric Distribution Assignment
Junseok Lee, Yunhak Oh, Yeonjun In, **Namkyeong Lee**, Dongmin Hyun, Chanyoung Park
ACM SIGIR Conference on Research and Development in Information Retrieval (**SIGIR 2022 Short Paper**)
- [C1] Augmentation-Free Self-Supervised Learning on Graphs
Namkyeong Lee, Junseok Lee, Chanyoung Park
AAAI Conference on Artificial Intelligence (**AAAI 2022**)

JOURNALS

- [J2] Deep Single-cell RNA-seq data Clustering with Graph Prototypical Contrastive Learning
Junseok Lee, Sungwon Kim, Dongmin Hyun, **Namkyeong Lee**, Yejin Kim, Chanyoung Park
Bioinformatics (2023)
- [J1] Self-Supervised Graph Representation Learning via Positive Mining
Namkyeong Lee, Junseok Lee, Chanyoung Park
Information Sciences (2022)

WORKSHOPS

- [W2] Deep Single-cell RNA-seq data Clustering with Graph Prototypical Contrastive Learning
Junseok Lee, Sungwon Kim, Dongmin Hyun, **Namkyeong Lee**, Yejin Kim, Chanyoung Park
ICML Workshop on Computational Biology (**WCB 2023**)
- [W1] Predicting Density of States via Multi-modal Transformer
Namkyeong Lee[†], Heewoong Noh[†], Sungwon Kim, Dongmin Hyun, Chanyoung Park
ICLR Workshop on Machine Learning for Materials (**ML4Materials 2023**)

PROJECTS

- Retrosynthesis Analysis for Inorganic Materials** May 2023 – Present
▪ Collaboration with Korea Research Institute of Chemical Technology (KRICT)
- Learning Continual Universal User Representation for Recommendation** Jul 2022 – Jun 2023
▪ Collaboration with NAVER Shopping
- Predicting Molecular Properties after Chemical Interaction** Mar 2022 – Dec 2022
▪ Collaboration with Korea Research Institute of Chemical Technology (KRICT)
- Predicting Density of States based on the Structure of Materials** May 2021 – Mar 2022
▪ Collaboration with Korea Research Institute of Chemical Technology (KRICT)
- Sentence Similarity Model for Korean Legal Sentences** June 2020 – Dec 2020
▪ 1st Awarded project at Seoul R&D research center (2020)

AWARDS & SCHOLARSHIPS

- CIKM Travel Award** Sep 2022
▪ SIGIR student travel grants for CIKM 2022.
- Grand Prize at Seoul Innovation Challenge 2020**, Seoul Business Agency Jan 2021
▪ Building AI model for providing quantified answers to Korean legal questions.
• Awarded for the best team among 444 teams.
- Dean's List**, Korea University Spring 2019
▪ Academic Excellence Award for attaining a semester GPA of 4.5/4.5.
- Special Scholarship for the Student Affairs Office**, Korea University Fall 2019, Spring 2020
- Veritas Scholarship**, Korea University Spring 2020
▪ Research on optimize drone routing with trucks for on-demand services
• Advisor: Prof. Taesu Cheong
- Certificate**, Korea National Police Agency Fall 2018
▪ An exemplary auxiliary police.

TEACHING EXPERIENCE

- Teaching Assistant**
▪ IE343: Statistical Machine Learning Spring 2021, 2022, 2023
▪ CoE202: Basics of Artificial Intelligence Fall 2021

**PROFESSIONAL
SERVICES**

Conference Reviews

- Conference on Neural Information Processing Systems (NeurIPS), 2023
- AAAI Conference on Artificial Intelligence (AAAI), 2023

Journal Reviews

- ACM Transactions on Knowledge Discovery from Data (TKDD)
- IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
- World Wide Web

Workshop Reviews

- Computational Biology (WCB) @ ICML 2023
- Structured Probabilistic Inference & Generative Modeling (SPIGM) @ ICML 2023

**TALKS AND
SEMINARS**

Relational Self-Supervised Learning on Graphs

- Top Conference Session of Korea Software Congress (KSC) 2022

Augmentation-Free Self-Supervised Learning on Graphs

- Top Conference Session of Korea Computer Congress (KCC) 2022

REFERENCES

Prof. Chanyoung Park

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