

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 Mar 2023 – Present
 - Research Interest: Graph Representation Learning, AI4Science
 - Advisor: [Prof. Chanyoung Park](#)

KAIST (Korea Advanced Institute of Science and Technology)

- M.S. in Industrial and Systems Engineering Mar 2021 – Feb 2023
 - GPA: 3.85/4.3
 - Research Interest: Graph Representation Learning, Graph Mining
 - Advisor: [Prof. Chanyoung Park](#)

Korea University

- B.S. in Industrial Management Engineering Mar 2015 – Feb 2021
 - GPA: 3.9/4.5
 - Dean's List (Spring 2021)

WORK EXPERIENCE

University of Illinois at Urbana-Champaign, Urbana, IL, USA

Sep 2023 – Present

- Visiting Scholar in Computer Science Department
 - Host: [Prof. Jimeng Sun](#)
 - Project: Accelerating Drug Discovery Process with Graph Neural Networks

NAVER, Seongnam, Korea

Dec 2022 – Feb 2023

- Research Intern
 - Mentor: [Dr. Donghyun Kim](#)
 - Project: Learning Continual User Representation for Recommendation

AIsoftKorea, Seoul, Korea

Jun 2020 – Mar 2021

- Co-founder of an AI-based Legal Counseling Startup Company
 - Building AI model for providing qualified answers to Korean legal questions

PUBLICATIONS

(†: Equal contribution)

CONFERENCES

- [C9] Density of States Prediction of Crystalline Materials via Prompt-guided Multi-Modal Transformer
Namkyeong Lee[†], Heewoong Noh[†], Sungwon Kim, Dongmin Hyun, Gyoung S. Na, Chanyoung Park
Conference on Neural Information Processing Systems (**NeurIPS 2023**)
- [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 Learning
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** 2023
 - Collaboration with Korea Research Institute of Chemical Technology (KRICT)
- Learning Continual Universal User Representation for Recommendation** 2022
 - Collaboration with NAVER Shopping
- Predicting Molecular Properties after Chemical Interaction** 2022
 - Collaboration with Korea Research Institute of Chemical Technology (KRICT)
- Predicting Density of States based on the Structure of Materials** 2021
 - Collaboration with Korea Research Institute of Chemical Technology (KRICT)
- Sentence Similarity Model for Korean Legal Sentences** 2020
 - 1st Awarded project at Seoul R&D research center

AWARDS & SCHOLARSHIPS

- KDD Travel Award** 2023
 - SIGKDD student travel awards for KDD 2023.
- CIKM Travel Award** 2022
 - SIGIR student travel grants for CIKM 2022.
- Grand Prize at Seoul Innovation Challenge 2020**, Seoul Business Agency 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 <ul style="list-style-type: none"> Research on optimize drone routing with trucks for on-demand services <ul style="list-style-type: none"> Advisor: Prof. Taesu Cheong 	Spring 2020
	Certificate , Korea National Police Agency <ul style="list-style-type: none"> An exemplary auxiliary police. 	2018
TEACHING EXPERIENCE	Teaching Assistant <ul style="list-style-type: none"> IE343: Statistical Machine Learning CoE202: Basics of Artificial Intelligence 	Spring 2021 - 2023 Fall 2021
PROFESSIONAL SERVICES	Conference Reviews <ul style="list-style-type: none"> AAAI Conference on Artificial Intelligence (AAAI) International Conference on Learning Representations (ICLR) Learning on Graphs Conference (LoG) Conference on Neural Information Processing Systems (NeurIPS) Journal Reviews <ul style="list-style-type: none"> ACM Transactions on Knowledge Discovery from Data (TKDD) IEEE Transactions on Neural Networks and Learning Systems (TNNLS) World Wide Web Workshop Reviews <ul style="list-style-type: none"> Computational Biology (WCB) @ ICML Structured Probabilistic Inference & Generative Modeling (SPIGM) @ ICML 	2023 - 2024 2024 2023 2023 2023 2023
TALKS AND SEMINARS	Relational Self-Supervised Learning on Graphs <ul style="list-style-type: none"> Top Conference Session of Korea Software Congress (KSC) 2022 Augmentation-Free Self-Supervised Learning on Graphs <ul style="list-style-type: none"> Top Conference Session of Korea Computer Congress (KCC) 2022 	
REFERENCES	Prof. Chanyoung Park Professor of Industrial and Systems Engineering KAIST (Korea Advance Institute of Science and Technology) cy.park@kaist.ac.kr • +82 (042) 350-3137	

[CV compiled on 2023-09-21]