

Junseok Lee

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RESEARCH INTEREST

I am interested in conducting research on general machine learning methodologies (e.g., self-supervised learning) and applying them to real-world problems, with a particular focus on Bioinformatics (e.g., single-cell RNA analysis).

- Graph Representation Learning
- Bioinformatics

EDUCATION

KAIST (Korea Advanced Institute of Science and Technology)

- Ph.D. in Industrial and Systems Engineering Mar 2023 – Present
 - Research Interest: Graph Representation Learning, Bioinformatics
 - Advisor: [Prof. Chanyoung Park](#)

KAIST (Korea Advanced Institute of Science and Technology)

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

Pusan National University

- B.S. in Industrial Engineering Mar 2015 – Feb 2021
 - GPA: 4.15/4.5

POSITIONS

University of Texas Health Science Center at Houston (UTHealth)

- Research Assistant at McWilliams School of Biomedical Informatics Jul 2024 – Present
 - Advisor: [Prof. Yejin Kim](#)

PUBLICATIONS

(†: Equal contribution)

CONFERENCES

- [C6] Task-Equivariant Graph Few-shot Learning
Sungwon Kim, **Junseok Lee**, Namkyeong Lee, Wonjoong Kim, Seungyoon 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

- [J3] Single-cell RNA Sequencing Data Imputation Using Bi-level Feature Propagation
Junseok Lee[†], Sukwon Yun[†], Yeongmin Kim, Tianlong Chen, Manolis Kellis, Chanyoung Park
Briefings in Bioinformatics (2024)
- [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] Single-cell RNA-seq data imputation using Feature Propagation
 Sukwon Yun[†], **Junseok Lee**[†], Chanyoung Park
 ICML Workshop on Computational Biology (**WCB 2023**) (**Best Paper, Contributed Talk**)
- [W1] 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**)

PROJECTS **Development of Artificial Intelligence-Based Insurance Claims Payout Prediction Model** 2021
 ■ Collaboration with Shinhan Life

AWARDS ■ Best Paper Award at ICML 2023 Workshop on Computational Biology Jul 2023

TEACHING EXPERIENCE **Teaching Assistant**
 ■ DS503: Special Topics in Data Science
 <Data Engineering for Big Data Analytics> Spring 2024
 ■ IE343: Statistical Machine Learning Spring 2022
 ■ KSE801: Special Topics in Knowledge Service Engineering
 <Recommender System and Graph Machine Learning> Fall 2022

PROFESSIONAL SERVICES **Area Chair**
 ■ NeurIPS Workshop (AI for Science: from Theory to Practice) [2023]
 ■ ICML Workshop (AI for Science: Scaling in AI for Scientific Discovery) [2024]

Journal Reviews
 ■ Evolving Systems (EVOS)
 ■ International Journal of Machine Learning and Cybernetics (IJMLC)
 ■ IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
 ■ Artificial Intelligence Review

TALKS AND SEMINARS **Single-cell RNA-seq data imputation using Feature Propagation**
 ■ Contributed talk on ICML Workshop on Computational Biology (WCB) 2023

REFERENCES **Prof. Chanyoung Park**
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 KAIST (Korea Advance Institute of Science and Technology)
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