

Sukwon Yun

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RESEARCH INTEREST

Graph Neural Networks

- Designing robust Graph Neural Networks under various circumstances as real-world scenarios where inductive bias does not hold ideally and alleviating the fundamental limitation of Graph Neural Networks
- **Keywords:** Long-Tail Problem, Missing Features, Heterophily, Oversmoothing

EDUCATION

Korea Advanced Institute of Technology (KAIST), Daejeon, South Korea Aug 2021 – Aug 2023

- M.S. in Industrial & Systems Engineering
 - Research Interest: Graph Neural Networks, Recommender Systems
 - Advisor: [Prof. Chanyoung Park](#)

Hanyang University, Seoul, South Korea Mar 2015 – Aug 2021

- B.S. in Industrial Engineering
 - Early Graduation, *Summa Cum Laude*
 - Period includes two years of military service, required for all Korean men

PUBLICATIONS

CONFERENCES

- [C2] MELT: Mutual Enhancement of Long-Tailed User and Item for Sequential Recommendation
Kibum Kim, Dongmin Hyun, **Sukwon Yun**, Chanyoung Park
ACM SIGIR Conference on Research and Development in Information Retrieval (**SIGIR 2023**)
- [C1] LTE4G: Long-Tail Experts for Graph Neural Networks
Sukwon Yun, Kibum Kim, Kanghoon Yoon, Chanyoung Park
ACM International Conference on Information and Knowledge Management (**CIKM 2022**)

RESEARCH EXPERIENCES

Tokyo Institute of Technology (Tokyo Tech), Tokyo, Japan Oct 2022 – Feb 2023

- Visiting Researcher in Murata Lab.
 - Host: [Prof. Tsuyoshi Murata](#)
 - Explored weaknesses of structured-based and GNN-based methods in graphs with missing features
 - Proposed supervised contrastive learning that incorporates pseudo-labels in graph domains
 - Submitted a paper that alleviates missing feature problem on graphs at KDD 2023

Korea Advanced Institute of Technology (KAIST), Daejeon, South Korea Dec 2020 – Feb 2021

- Research Intern in Data Science & Artificial Intelligence Lab. (DSAIL)
 - Advisor: [Prof. Chanyoung Park](#)
 - Researched fundamentals of spectral-based GNNs such as GCN ([link](#)), GAT ([link](#)), and also BPR ([link](#))
 - Implemented key papers on Graph Neural Networks and Recommendation Systems

Hanyang University, Seoul, South Korea Sep 2020 – Aug 2021

- Research Student in Intelligent Data Systems Lab. (IDSL)
 - Advisor: [Prof. Kichun Lee](#)
 - Proposed an advanced version of Neural Graph Collaborative Filtering using a heterogeneous graph
 - Implemented Matrix Factorization of the BPR model using multiprocessing on the Epinion dataset
 - Implemented One-Class SVM on anomaly detection task using MNIST dataset

TEACHING EXPERIENCE

IE343: Statistical Machine Learning, KAIST Spring, 2022

- Gave a tutorial and hosted Kaggle Competition (Course Project) as a Teaching Assistant
 - Competition: Predicting a person's income using a demographic dataset under an imbalance situation

AWARDS & SCHOLARSHIPS

Korea National Scholarship 2021 – Present

- Awarded by the Ministry of Science and ICT, South Korea

Poster Competition Excellence Award 2022

- Awarded at Industrial/Social Problem Solving Session held by Department of ISysE, KAIST

SIGIR Student Travel Award 2022

- ACM International Conference on Information and Knowledge Management, Georgia, USA

Merit Based Scholarship 2021

- Awarded by the Department of Industrial Engineering, Hanyang University

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| Hanyang Academic Achievement Award | 2021 |
| ▪ Awarded within the top 3% among the College of Engineering, Hanyang University | |
| Certificate of Recognition | 2018 |
| ▪ Awarded when serving military service as auxiliary police by Seoul Metropolitan Police | |

PROJECTS	Recommending Financial Products based on Graph Embeddings	Feb 2021 – Feb 2022
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- Collaboration with Hana Bank, South Korea
 - Generated financial networks via Jaccard similarity from user’s data and enhanced user representation via GNN

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| REFERENCES | <ul style="list-style-type: none"> ▪ Prof. Chanyoung Park, Assistant Professor, KAIST
Email: cy.park@kaist.ac.kr ▪ Prof. Tsuyoshi Murata, Professor, Tokyo Tech
Email: murata@c.titech.ac.jp ▪ Prof. Kichun Lee, Associate Professor, Hanyang University
Email: skylee@hanyang.ac.kr |
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