Sukwon Yun

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RESEARCH INTEREST

Graph Neural Networks

- Alleviating and enhancing the *Weakness of Graph Neural Networks* where the inductive bias of GNNs do not hold ideally and designing robust GNN models under various circumstances as real-world scenarios
- **Keywords**: Long-Tail Problem, Heterophily, Oversmoothing, Missing Features

EDUCATION

KAIST, Daejeon, South Korea — Sep 2021 – Present

- 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, GPA: 3.70/4.00 (overall) 3.79/4.00 (major), *Summa Cum Laude*
  - Period includes two years of military service, required for all Korean men

PUBLICATIONS

CONFERENCES

[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 – Present

- Visiting Student (Research-oriented) in Murata Lab.
  - Host: Prof. Tsuyoshi Murata
  - Focus: Missing Features in GNN, Heterophily in GNN

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

- Research Student in Data Science & Artificial Intelligence Lab. (DSAIL)
  - Advisor: Prof. Chanyoung Park
  - Researched fundamentals of spectral based Graph Neural Networks
  - Implemented key papers on Graph Neural Networks and Recommendation Systems
  - Gave presentations of GCN (link), GAT (link), BPR (link) during seminars

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

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

AWARDS & SCHOLARSHIPS

SIGIR Student Travel Award — 2022

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

Korea National Scholarship — 2021 – Present

- Awarded by Korea Ministry of Science and ICT

Hanyang Academic Achievement Award, Hanyang University — 2021

- Awarded within top 3% among the College of Engineering

Dean's List, Hanyang University — 2018 - 2021

- Academic Excellence Award

Certificate of Recognition, Seoul Metropolitan Police — 2018

- Awarded when serving military service as an auxiliary police

TEACHING EXPERIENCE

IE343: Statistical Machine Learning, KAIST — Spring, 2022

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

PROJECTS

Recommending Financial Products based on Graph Embeddings Feb 2021 – Feb 2022

- Collaboration with Hana Bank, South Korea
  - Generated financial networks via jaccard similarity from user's data and enhanced user representation via GNN

REFERENCES

- **Prof. Chanyoung Park**, Assistant Professor, KAIST
  Email: cy.park@kaist.ac.kr
- **Prof. Kichun Lee**, Associate Professor, Hanyang University
  Email: skylee@hanyang.ac.kr
- **Prof. Tsuyoshi Murata**, Professor, Tokyo Tech
  Email: murata@c.titech.ac.jp