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, Heterophily, Oversmoothing, Missing Features

EDUCATION

Korea Adavanced Institute of Technology (KAIST), Daejeon, South Korea — Aug 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, *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
Published at 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
  - Explored weaknesses of diffusion-based imputation methods such as Feature Propagation
  - Aiming to impute missing features via a supervised signal using Label Propagation

Korea Adavanced 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

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

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

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

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