Sukwon Yun

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RESEARCH INTEREST	**AI for Science** ▪ Addressing the inductive bias of AI (GNNs, LLMs) in real-world scenarios, with their application in the field of Computational Biology, particularly scRNA-seq and Tumor biology ▪ *Keywords*: Long-Tail Problem, Missing Features, Heterophily, Dropout, Tissue Phenotyping

EDUCATION

University of North Carolina at Chapel Hill, Chapel Hill, NC, USA — Starting from Aug 2024 –
▪ Ph.D. in Computer Science
  - Research Interest: AI4Science, Efficient ML
  - Advisor: Prof. Tianlong Chen

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
  - *Summa Cum Laude*, Period includes two years of military service

PUBLICATIONS
(*: Equal contribution)

CONFERENCES

[C6] Multiplexed Immunofluorescence Image Analysis through an Efficient Multiplex Network
Sukwon Yun, Jie Peng, Alexandro Trevino, Chanyoung Park, Tianlong Chen
European Conference on Computer Vision (**ECCV 2024**)

[C5] DEGNN: Dual Experts Graph Neural Network Handling Both Edge and Node Feature Noise
Tai Hasegawa, **Sukwon Yun**, Xin Liu, Yin Jun Phua, Tsuyoshi Murata
The Pacific-Asia Conference on Knowledge Discovery and Data Mining (**PAKDD 2024**)

[C4] MUSE: Music Recommender System with Shuffle Play Recommendation Enhancement
Yunhak Oh*, **Sukwon Yun***, Dongmin Hyun, Sein Kim, Chanyoung Park
ACM International Conference on Information and Knowledge Management (**CIKM 2023**)

[C3] S-Mixup: Structural Mixup for Graph Neural Networks
Junghurn Kim*, **Sukwon Yun***, Chanyoung Park
ACM International Conference on Information and Knowledge Management (**CIKM Short 2023**)

[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**)

WORKSHOPS

[W2] Noise Robust Graph Learning under Feature-Dependent Graph-Noise
Yeonjun In, Kanghoon Yoon, **Sukwon Yun**, Kibum Kim, Sungchul Kim, Chanyoung Park
WWW 2024 Workshop on Data-centric Artificial Intelligence (**WWW DCAI 2024 *Oral***)

[W1] Single-cell RNA-seq data imputation using Feature Propagation
Sukwon Yun*, Junseok Lee*, Chanyoung Park
ICML Workshop on Computational Biology (**ICML WCB 2023 *Best Paper Award***)

JOURNALS

[J1] 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)

RESEARCH EXPERIENCES	**Massachusetts Institute of Technology (MIT)**, Cambridge, MA	Aug 2023 – Present

- Remote Research Intern in Kellis Lab.
  - Mentors: Dr. Tianlong Chen, Dr. Zunpeng Liu, Dr. Leandro Z. Agudelo, Dr. Lei Xiong

Tokyo Institute of Technology (Tokyo Tech), Tokyo, Japan　　　Oct 2022 – Feb 2023
- Visiting Researcher in Murata Lab.
  - Host: Prof. Tsuyoshi Murata

Korea Advanced Institute of Technology (KAIST), Daejeon, South Korea　　Dec 2020 – Feb 2021
- Research Intern in Data Science & Artificial Intelligence Lab. (DSAIL)
  - Mentor: Prof. Chanyoung Park

Hanyang University, Seoul, South Korea　　　Sep 2020 – Aug 2021
- Student Researcher in Intelligent Data Systems Lab. (IDSL)
  - Mentor: Prof. Kichun Lee

TEACHING EXPERIENCE

KAIST
- IE343: Statistical Machine Learning　　　Spring, 2022

AWARDS & SCHOLARSHIPS

Best Paper Award　　　2023
- ICML Workshop on Computational Biology, Honolulu, Hawai'i, USA

Korea National Scholarship　　　2021 – 2023
- 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 an auxiliary police by Seoul Metropolitan Police

PROFESSIONAL SERVICES

Event Organizations
- Session Chair, Knowledge Representation 3, CIKM 2023, Birmingham, UK

Conference Reviews
- The European Conference on Computer Vision (ECCV)　　　2024
- International Conference on Machine Learning (ICML)　　　2024
- The International Conference on Learning Representations (ICLR)　　　2024
- Conference on Parsimony and Learning (CPAL)　　　2024
- Conference on Neural Information Processing Systems (NeurIPS)　　　2023, 2024

Workshop Reviews
- ML4LMS Workshop @ ICML　　　2024
- ASEA Workshop @ AAAI　　　2024

PROJECTS

Recommending Financial Products based on Graph Embeddings　　　Feb 2021 – Feb 2022
- Collaboration with Hana Bank, South Korea

REFERENCES

- **Prof. Tianlong Chen**, Assistant Professor, UNC
  Email: tianlong@cs.unc.edu

- **Prof. Chanyoung Park**, Assistant Professor, KAIST
  Email: cy.park@kaist.ac.kr

- **Prof. Tsuyoshi Murata**, Professor, Tokyo Tech
  Email: murata@c.titech.ac.jp