

# Sukwon Yun

swyun@cs.unc.edu • [Homepage](#) • [Google Scholar](#) • [Github](#)

## RESEARCH INTEREST

### AI for Science, Multi-Agent LLMs

- Addressing inductive bias of AI (LLMs, MoE, GNNs) with their application in Computational Biology

## EDUCATION

**University of North Carolina at Chapel Hill**, Chapel Hill, NC, USA Aug 2024 – Present

- Ph.D. in Computer Science (Advisor: [Prof. Tianlong Chen](#))

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

- M.S. in Industrial & Systems Engineering (Advisor: [Prof. Chanyoung Park](#))

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

- B.S. in Industrial Engineering, *Summa Cum Laude*

## PUBLICATIONS

(\*: Equal contribution)

### CONFERENCES

- [C12] Sparse MoE as a New Treatment: Addressing Forgetting, Fitting, Learning Issues in Multi-Modal Multi-Task Learning  
Jie Peng, **Sukwon Yun**, Kaixiong Zhou, Ruida Zhou, Thomas Hartvigsen, Yanyong Zhang, Zhangyang Wang, Tianlong Chen  
CPAL 2025
- [C11] Cut the Crap: An Economical Communication Pipeline for LLM-based Multi-Agent Systems  
Guibin Zhang, Yanwei Yue, Zhixun Li, **Sukwon Yun**, Guancheng Wan, Kun Wang, Dawei Cheng, Jeffrey Xu Yu, Tianlong Chen  
ICLR 2025
- [C10] PortLLM: Personalizing Evolving Large Language Models with Training-Free and Portable Model Patches  
Rana Muhammad Shahroz Khan, Pingzhi Li\*, **Sukwon Yun\***, Zhenyu Wang, Shahriar Nirjon, Chau-Wai Wong, Tianlong Chen  
ICLR 2025
- [C9] Subgraph Federated Learning for Local Generalization  
Sungwon Kim, Yoonho Lee, Yunhak Oh, Namkyeong Lee, **Sukwon Yun**, Junseok Lee, Sein Kim, Carl Yang, Chanyoung Park  
ICLR 2025 **Oral**
- [C8] Flex-MoE: Modeling Arbitrary Modality Combination via the Flexible Mixture-of-Experts  
**Sukwon Yun**, Inyoung Choi, Jie Peng, Yangfan Wu, Jingxuan Bao, Qiyiwen Zhang, Jiayi Xin, Qi Long, Tianlong Chen  
NeurIPS 2024 **Spotlight**
- [C7] DALK: Dynamic Co-Augmentation of LLMs and KG to answer Alzheimer’s Disease Questions with Scientific Literature  
Dawei Li, Shu Yang, Zhen Tan, Jae Young Baik, **Sukwon Yun**, Joseph Lee, Aaron Chacko, Bojian Hou, Duy Duong-Tran, Ying Ding, Huan Liu, Li Shen, Tianlong Chen  
EMNLP 2024 Findings
- [C6] Mew: Multiplexed Immunofluorescence Image Analysis through an Efficient Multiplex Network  
**Sukwon Yun**, Jie Peng, Alexandro Trevino, Chanyoung Park, Tianlong Chen  
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  
PAKDD 2024
- [C4] MUSE: Music Recommender System with Shuffle Play Recommendation Enhancement  
Yunhak Oh\*, **Sukwon Yun\***, Dongmin Hyun, Sein Kim, Chanyoung Park  
CIKM 2023
- [C3] S-Mixup: Structural Mixup for Graph Neural Networks  
Junghurn Kim\*, **Sukwon Yun\***, Chanyoung Park  
CIKM 2023 Short

- [C2] MELT: Mutual Enhancement of Long-Tailed User and Item for Sequential Recommendation  
Kibum Kim, Dongmin Hyun, **Sukwon Yun**, Chanyoung Park  
SIGIR 2023
- [C1] LTE4G: Long-Tail Experts for Graph Neural Networks  
**Sukwon Yun**, Kibum Kim, Kanghoon Yoon, Chanyoung Park  
CIKM 2022

#### 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

#### WORKSHOPS

- [W4] Generate, Then Retrieve: Addressing Missing Modalities in Multimodal Learning via Generative AI and MoE  
**Sukwon Yun\***, Jiayi Xin\*, Inyoung Choi, Jie Peng, Qi Long, Tianlong Chen  
AAAI GenAI4Health 2025 **Best Paper Award**
- [W3] Subgraph Federated Learning for Local Generalization  
Sungwon Kim, Yoonho Lee, Yunhak Oh, Namkyeong Lee, **Sukwon Yun**, Junseok Lee, Sein Kim, Carl Yang, Chanyoung Park  
KDD FedKDD 2024 **Best Paper Award**
- [W2] Noise Robust Graph Learning under Feature-Dependent Graph-Noise  
Yeonjun In, Kanghoon Yoon, **Sukwon Yun**, Kibum Kim, Sungchul Kim, Chanyoung Park  
WWW DCAI 2024 **Oral**
- [W1] Single-cell RNA-seq data imputation using Feature Propagation  
**Sukwon Yun\***, Junseok Lee\*, Chanyoung Park  
ICML 2023 WCB **Best Paper Award**

#### PREPRINT

- [P3] Symbolic Mixture-of-Experts: Adaptive Skill-based Routing for Heterogeneous Reasoning  
Justin Chih-Yao Chen\*, **Sukwon Yun\***, Elias Stengel-Eskin\*, Tianlong Chen, Mohit Bansal
- [P2] GRNFormer: A Biologically-Guided Framework for Integrating Gene Regulatory Networks into RNA Foundation Models  
Mufan Qiu, Xinyu Hu, Fengwei Zhan, **Sukwon Yun**, Jie Peng, Ruichen Zhang, Bhavya Kailkhura, Jiekun Yang, Tianlong Chen
- [P1] scMoE: single-cell Multi-Modal Multi-Task Learning via Sparse Mixture-of-Experts  
**Sukwon Yun\***, Jie Peng\*, Namkyeong Lee, Yanyong Zhang, Chanyoung Park, Zunpeng Liu, Tianlong Chen

#### RESEARCH EXPERIENCES

- Massachusetts Institute of Technology (MIT)**, Cambridge, MA Aug 2023 – Jul 2024
- 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** 2025
- AAAI Workshop on Large Language Models and Generative AI for Health, Philadelphia, PA, USA
- Best Paper Award** 2024
- KDD Workshop on Federated Learning for Data Mining and Graph Analytics, Barcelona, Spain
- 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, Birmingham, UK, CIKM (2023)
- Program Committee**
- AAAI (2025)
- Conference Reviews**
- NeurIPS (2023 - ), ICLR (2024 - ), ICML (2024 - ), CVPR (2025), ICCV (2025), ECCV (2024), MICCAI (2025), ACL (2025), COLM (2025), KDD (2025), CPAL (2024 - )
- Workshop Reviews**
- GenAI4Health @ AAAI (2025), ML4LMS @ ICML (2024), ASEA @ AAAI (2024)