

Sungwon Kim

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RESEARCH INTEREST	Physics AI (Engineering), 3D Simulation, Data-driven AI, Data-Efficient Learning
PROFESSIONAL EXPERIENCE	AI SOFTWARE Of KOREA , Seoul, South Korea <ul style="list-style-type: none">▪ Co-CEO, Co-Founder<ul style="list-style-type: none">• Development of AI for Socially Vulnerable Groups (information disadvantaged, older persons, children)• Management <p>Jul 2019 – Feb 2022</p>
EDUCATION	KAIST (Korea Advanced Institute of Technology) , Daejeon, South Korea <ul style="list-style-type: none">▪ Ph.D. in Graduate School of Data Science<ul style="list-style-type: none">• Research Interest: Learning-based 3D Simulation• Adviser: Prof. Chanyoung Park▪ M.S. in Graduate School of Data Science<ul style="list-style-type: none">• Research Interest: Data-efficient Learning, Federated Learning• Adviser: Prof. Chanyoung Park <p>Feb 2024 – Present</p> Korea University , Seoul, South Korea <ul style="list-style-type: none">▪ B.S. in Civil, Environmental and Architectural Engineering <p>Feb 2022 – Feb 2024</p> <p>Mar 2014 – Feb 2022</p>
PUBLICATIONS (*: Equal contribution)	CONFERENCES [C9] Thickness-aware E(3)-Equivariant 3D Mesh Neural Networks Sungwon Kim , Namkyeong Lee, Yunyoung Doh, Seungmin Shin, Guimok Cho, Seung-Won Jeon, Sangkook Kim, Chanyoung Park ICML 2025 - Forty-Second International Conference on Machine Learning [C8] 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, top 1.8%) - The Thirteenth International Conference on Learning Representations [C7] Self-Explainable Temporal Graph Networks based on Graph Information Bottleneck Sangwoo Seo, Sungwon Kim , Jihyeong Jung, Yoonho Lee, Chanyoung Park KDD 2024 - ACM SIGKDD Conference on Knowledge Discovery and Data Mining [C6] Unsupervised Episode Generation for Graph Meta-learning Jihyeong Jung, Sangwoo Seo, Sungwon Kim , Chanyoung Park ICML 2024 – International Conference on Machine Learning [C5] DSLR: Diversity Enhancement and Structure Learning for Rehearsal-based Graph Continual Learning Seungyo Choi*, Wonjoong Kim*, Sungwon Kim , Yeonjun In, Sein Kim, Chanyoung Park WWW 2024 (Oral) – The Web Conference [C4] Interpretable Prototype-based Graph Information Bottleneck Sangwoo Seo, Sungwon Kim , Chanyoung Park NeurIPS 2023 - In Conference on Neural Information Processing Systems (NeurIPS) - Gold Prize at the 2023 Samsung Humantech Paper Award [C3] Density of States Prediction of Crystalline Materials via Prompt-guided Multi-Modal Transformer Namkyeong Lee*, Heewoong Noh*, Sungwon Kim , Dongmin Hyun, Gyoung S. Na, Chanyoung Park NeurIPS 2023 - In Conference on Neural Information Processing Systems (NeurIPS) [C2] Task-Equivariant Graph Few-shot Learning Sungwon Kim , Junseok Lee, Namkyeong Lee, Wonjoong Kim, Seungyo Choi, Chanyoung Park KDD 2023 - ACM SIGKDD Conference on Knowledge Discovery and Data Mining [C1] Conditional Graph Information Bottleneck for Molecular Relational Learning Namkyeong Lee, Dongmin Hyun, Gyoung S. Na, Sungwon Kim , Junseok Lee, Chanyoung Park ICML 2023 - International Conference on Machine Learning

JOURNALS

- [J1] **Deep Single-cell RNA-seq Data Clustering with Graph Prototypical Contrastive Learning**
 Junseok Lee, **Sungwon Kim**, Dongmin Hyun, Namkyeong Lee, Yejin Kim, Chanyoung Park
Bioinformatics 2023 (SCI)

WORKSHOPS

- [W4] **Capturing Functional Context of Genetic Pathways through Hyperedge Disentanglement**
 Yoonho Lee, Junseok Lee, Sangwoo Seo, Sungwon Kim, Yeongmin Kim, Chanyoung Park
ICLR 2025 - Workshop on Machine Learning for Genomics Explorations (MLGenX)
- [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 2024 (Best Paper Award) - Workshop on Federated Learning for Data Mining and Graph Analytics
- [W2] **Interpretable Graph Model with Prototype-Based Graph Information Bottleneck**
 Sangwoo Seo, **Sungwon Kim**, Chanyoung Park
KDD 2024 (Best Paper Award) - Workshop on Human-Interpretable AI
- [W1] **Deep single-cell RNA-seq data clustering with graph prototypical contrastive learning**
 Junseok Lee, **Sungwon Kim**, Dongmin Hyun, Namkyeong Lee, Yejin Kim, Chanyoung Park
ICML 2023 - Workshop on Computational Biology

PROJECTS

- **3D Geometry-Based Graph Neural Networks for Engineering Simulation**, LG Electronics 2025 –
- **3D Geometry-Based Graph Neural Networks for Injection Molding**, LG Electronics 2024
- **Translating Korean Legal Case's Sentences into Common Terms**, AISoftKorea 2021– 2022
 Best award project at Seoul R&D research center (2021)
- **Sentence Similarity Model for Korean Legal Sentences**, AISoftKorea 2020
 Best award project at Seoul R&D research center (2020)
- **Big Data Analysis of Color Cognition in Older Adults and Disabled Children**, AISoftKorea 2017
 Development of Color Cognitive Test Kit and Multivariate Regression Analysis

HONORS & AWARDS

- **Best Paper Award** 2024
 KDD 2024 -Workshop on Federated Learning for Data Mining and Graph Analytics (FedKDD), Barcelona, Spain
- **Best Paper Award** 2024
 KDD 2024 -Workshop on Human-Interpretable AI, Barcelona, Spain
- **30th Samsung Humantech Paper Award** 2024
 Gold Prize
- **Seoul Renovation Challenge**, Seoul Business Agency 2020
 Awarded for the best team out of 444 participants [news][news]
 Systems and methods for providing quantified AI answering services for legal questions
- **National University Rowing Conference**, Korean Rowing Association 2015
 First place, Crew of Korea University Rowing Team [YouTube]

PROFESSIONAL SERVICES

Conference Reviewer/Program Committee

- International Conference on Learning Representations (ICLR) 2025 – 2026
- Conference on Neural Information Processing Systems (NeurIPS) 2024 – 2025
- International Conference on Machine Learning (ICML) 2025
- Conference on Information and Knowledge Management (CIKM) - Short Applied Research 2025

Journal Reviewer

- IEEE Transactions on Network Science and Engineering (TSNE) 2025
- IEEE Transactions on Neural Networks and Learning Systems (TNNLS) 2024
- IEEE Transactions on Cognitive and Developmental Systems (TCDS) 2024

TEACHING EXPERIENCE

- **AI Specialist Course**, Samsung Electronics 2024
 Teaching Assistant
- **AI Specialist Course**, Samsung Electronics 2023
 Teaching Assistant
- **DS503: Machine Learning for Data Science**, KAIST 2023

	Teaching Assistant	
	▪ AI Business Transformation Program , KAIST Researcher	2022
	▪ IE343: Statistical Machine Learning , KAIST Teaching Assistant	2022
TALKS AND SEMINARS	▪ Top Conference Session , Korea Computer Congress (KCC) Subgraph Federated Learning for Local Generalization	2025
	▪ Top Conference Session , Korea Software Congress (KSC) Task-Equivariant Graph Few-shot Learning	2023
REFERENCES	▪ Prof. Chanyoung Park , Assistant Professor, KAIST Email: cy.park@kaist.ac.kr	

[CV compiled on 2025-09-06]