SUNGWON KIM

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EDUCATION

Feb 2024 – Present **Korea Advanced Institute of Science and Technology (KAIST)** DAEJEON, KOREA
Ph.D. in Graduate School of Data Science, at Data Science - Artificial Intelligence Lab (DSAIL)
Advisor: Prof. Chanyoung Park

Feb 2022 – Feb 2024 **Korea Advanced Institute of Science and Technology (KAIST)** DAEJEON, KOREA
M.S. in Graduate School of Data Science, at Data Science - Artificial Intelligence Lab (DSAIL)
Advisor: Prof. Chanyoung Park
GPA: 3.94 out of 4.3

Mar 2014 – Feb 2022 **Korea University** SEOUL, KOREA
B.S. in Architecture & Civil Engineering
GPA: 3.90 out of 4.5

RESEARCH INTEREST

Data Mining for Graph Neural Networks
Data-Efficient Deep Learning
Federated Learning

WORK EXPERIENCE

Jul 2019 – Feb 2022 **AI SOFTWARE OF KOREA** (한국에이아이소프트) SEOUL, KOREA
Co-CEO, Co-Founder

PUBLICATIONS

Conferences

[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**
Seungyoon 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, Seungyoon 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

[W2] **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 (WCB 2023)

[W1] **Predicting Density of States via Multi-modal Transformer**
Namkyeong Lee, Heewoong Noh, **Sungwon Kim**, Dongmin Hyun, Gyoung S Na, Chanyoung Park
ICLR 2023 Workshop on Machine Learning for Materials (ML4Materials)
- International Conference on Learning Representations

PROJECTS

Jan 2021 – Feb 2022 **Translating Korean Legal Case's Sentences into Common Terms**
1st award project at *Seoul R&D research center (2021)*

Jun 2020 – Dec 2020 **Sentence Similarity Model for Korean Legal Sentences**
1st award project at *Seoul R&D research center (2020)*

Oct 2017 – Dec 2017 **Analysis of Color Cognitive of Older Persons or Children with Disabilities by Big Data**
Development of Color Cognitive Test Kit and Multivariate Regression Analysis

HONORS AND AWARDS

Dec 2020 **Seoul Renovation Challenge** Seoul Business Agency
Awarded for the best team out of 444 participants
Systems and methods for providing quantified AI answering services for legal questions

Jul 2015 **National University Rowing Conference** Korean Rowing Association
Top award, Crew of Korea University Rowing Team

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Oct 2019 **Big data and AI-based Color Recognition Measurement Platform and Method**
Patent Number : 10-2351169-00-00
Registered Patent

TEACHING EXPERIENCE

Sep. 2023 **AI Specialist Course**, Samsung Electronics
Teaching Assistant

Spring 2023 **DS503: Machine Learning for Data Science**, KAIST
Teaching Assistant

Fall 2022 **AI Business Transformation Program**, KAIST
Researcher

Spring 2022 **IE343: Statistical Machine Learning**, KAIST
Teaching Assistant

TALKS AND SEMINARS

Winter 2023 **Task-Equivariant Graph Few-shot Learning**
Top Conference Session of Korea Software Congress (KSC)

ACTIVITIES

Mar 2015 – Present **Korea University Rowing Team**

Apr 2019 – Feb 2020 **Working Holidays in Australia**
Swimming Instructor, United Swimming Club

REFERENCES

Prof. Chanyoung Park
Assistant professor, KAIST
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