

# Dongki Kim

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## RESEARCH INTERESTS

My research interest is mainly on developing deep learning models for understanding graph-structured data and generating graph topology and geometry. I have been working on representation learning and generative model for graph with the application in the molecular graph.

## EDUCATION

### KAIST

Ph.D. in Artificial Intelligence

M.S. in Artificial Intelligence

- Advisor: [Prof. Sung Ju Hwang](#)

Deajeon, South Korea

Sep. 2023 – Present

Sep. 2021 – Aug. 2023

### Seoul National University (SNU)

B.S. in Compute Science and Engineering

B.S. in Applied Life Chemistry

Seoul, South Korea

Mar. 2014 – Feb. 2021

Mar. 2014 – Feb. 2021

## PUBLICATION

### Graph Generation with Diffusion Mixture

Jaeheyong Jo\*, [Dongki Kim](#)\*, Sung Ju Hwang

International Conference on Machine Learning (ICML), 2024

Machine Learning for Drug Discovery Workshop at ICLR (MLDD @ ICLR), 2023 (Spotlight)

### Protein Representation Learning by Capturing Protein Sequence-Structure-Function Relationship

Eunji Ko\*, [Seul Lee](#)\*, [Minseon Kim](#)\*, [Dongki Kim](#), Sung Ju Hwang

Machine Learning for Genomics Explorations Workshop at ICLR (MLGenX @ ICLR), 2024 (Spotlight)

### Antibody-SGM: Antigen-Specific Joint Design of Antibody Sequence and Structure using Diffusion Models

Xuezhi Xie, Jin Sub Lee, [Dongki Kim](#), Jaehyeong Jo, Jisun Kim, Philip M. Kim

Computational Biology Workshop at ICML (CompBio @ ICML), 2023

### Graph Self-supervised Learning with Accurate Discrepancy Learning

[Dongki Kim](#)\*, [Jinheon Baek](#)\*, Sung Ju Hwang

Conference on Neural Information Processing Systems (NeurIPS), 2022

### Edge Representation Learning with Hypergraphs

Jaehyeong Jo\*, [Jinheon Baek](#)\*, [Seul Lee](#)\*, [Dongki Kim](#), [Minki Kang](#), Sung Ju Hwang

Conference on Neural Information Processing Systems (NeurIPS), 2021

\* denotes equal contribution

## RESEACRH EXPERIENCE

### MLAI Lab, KAIST

Research Assistant (Advisor: Prof. Sung Ju Hwang)

- Conducting research on graph-structured data for representation learning and generation with the application to the molecular and general graphs.

Mar. 2021 – Present

### Kim Lab, University of Toronto

Visiting Student (Host: Prof. Philip M. Kim)

- Conducting research on protein generation using diffusion models.

Feb. 2023 – Feb. 2023

## TALK

### Generation of Graph-Structured Data with Diffusion Models

at University of Toronto

Feb. 2023

### Graph Self-supervised Learning with Accurate Discrepancy Learning

at KAIST

Nov. 2022

**ACADEMIC  
SERVICE**

Conference Reviewer

- Conference on Neural Information Processing Systems (**NeurIPS**), 2024
- International Conference on Machine Learning (**ICML**), 2024
- International Conference on Learning Representations (**ICLR**), 2024
- Conference on Neural Information Processing Systems (**NeurIPS**), 2023
- International Conference on Machine Learning (**ICML**), 2023
- Conference on Neural Information Processing Systems (**NeurIPS**), 2022
- International Conference on Machine Learning (**ICML**), 2022

**REFERENCE**

- [Prof. Sung Ju Hwang](#), Endowed Chair Professor, KAIST  
E-mail: sjhwang82@kaist.ac.kr