

# Ziseok Lee



Integrated Masters with PhD Program  
Department of Biomedical Sciences  
Seoul National University



## Research Interests

Probabilistic Generative Models  
Molecule Generation and Drug Design

## Education

<b>Seoul National University</b>	2025.03 - present
Integrated Masters with PhD Program in Biomedical Sciences	
<b>Seoul National University</b>	2021.03 - 2025.02
B.S. in Mathematical Sciences (Summa Cum Laude)	
Double Major in Computer Science and Engineering	

## Research Experience

<b>Masters-PhD Program at AIBL</b>	2024.10 - present
Probabilistic Generative Models for Biomolecule Generation and Drug Design	
<b>Undergraduate Research Assistant at SNU MLLAB</b>	2024.07 - 2024.09
Blackbox Optimization	
<b>Undergraduate Research Assistant at CTA Lab</b>	2024.01 - 2024.08
NP-hard Subgraph Matching Algorithms with Safety Conditions for Reduced Candidate Space	
<b>Undergraduate Research Assistant at HYKE Group</b>	2023.03 - 2023.07
Hyperbolic Conservation Laws with Nonlocal Relaxation	
<b>Undergraduate Research Internship at HYKE Group</b>	2022.12 - 2023.07
Collective Motion in the Vicsek Model	

## Seminar/Teaching Experience

<b>Teaching Assistant for [Introduction to Data Science]</b>	2025.03 - 2025.06
Assisted Professor Kyungsu Kim in teaching a second-year undergraduate course, supporting students through discussion sessions.	
<b>Teaching Assistant for [Calculus 1]</b>	2024.03 - 2024.06
Taught a course on Calculus 1. Was awarded <b>Excellent TA</b> and gave a case presentation.	
<b>Student-Directed Seminar [Understanding the Brain as a Complex System]</b>	2023.09 - 2023.12
Organized a student-directed seminar integrating theoretical neuroscience, network science, deep learning, biology, and psychology to understand the brain as a complex, entangled system.	

Taught a tutoring class for "Differential and Integral Calculus 1" during the Spring semester of 2023.

## Publications and Preprints

\* Equal contribution, † Corresponding Author

### Conference Papers

- *Early Timestep Zero-Shot Candidate Selection for Instruction-Guided Image Editing*, Joowon Kim\* and Ziseok Lee\* and Donghyeon Cho and Sanghyun Jo and Yeonsung Jung and Kyungsu Kim† and Eunho Yang†, Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV) (2025)

### Workshop Papers

- *HybridLinker: Topology-Guided Posterior Sampling for Enhanced Diversity and Validity in 3D Molecular Linker Generation*, Hwang, Minyeong and Lee, Ziseok and Kim, Gwangsoo and Kim, Kyungsu† and Yang, Eunho†, GenBio @ ICML 2025 Workshop (2025)

### Preprints

- *DiffEGG: Diffusion-Driven Edge Generation as a Pixel-Annotation-Free Alternative for Instance Annotation*, Jo, Sanghyun\* and Lee, Ziseok\* and Lee, Wooyeol and Kim, Kyungsu†, arXiv preprint arXiv:2503.07982 (2025)
- *ISAC: Training-Free Instance-to-Semantic Attention Control for Improving Multi-Instance Generation*, Sanghyun Jo\* and Wooyeol Lee\* and Ziseok Lee\* and Kyungsu Kim†, arXiv preprint arXiv:2505.20935 (2025)

### Academic Services

#### Reviewer for ICCV 2025

2025.04

Assisted Professor Kyungsu Kim in reviewing submissions for the ICCV 2025. Evaluated the quality, novelty, and significance of a research paper in computer vision. Contributed to the feedback provided to authors to improve their work.

#### Reviewer for ICML 2025

2025.03

Assisted Professor Kyungsu Kim in reviewing submissions for the ICML 2025. Evaluated the quality, novelty, and significance of two research papers in generative modeling (flow matching). Contributed to the feedback provided to authors to improve their work.

## Biography

Ziseok Lee is a graduate student in the [Department of Biomedical Sciences](#) at [Seoul National University](#). He is a member of the [Artificial Intelligence and Biomedical Informatics Lab \(AIBL\)](#) under the supervision of Professor Kyungsu Kim. He received his B.S. degree in the [Department of Mathematical Sciences](#) with a double major in the [Department of Computer Science and Engineering](#) at Seoul National University in 2025. His research interests include probabilistic generative models (diffusion models, schrodinger bridges, stochastic interpolants) and their applications to biomedical data (drug discovery, molecule design).