

# Ziseok Lee



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



## Research Interests

Generative Models, AI4Science, Computer Vision

## Projects

## Education

Seoul National University	2025.03 - present
Masters-PhD Program in Biomedical Sciences advised by Prof. Kyungsu Kim	
Seoul National University	2021.03 - 2025.02
B.S. in Mathematical Sciences (Major), B.S. in Computer Science and Engineering (Double Major)	
GPA 4.22/4.30 (Summa Cum Laude)	

## Research Experience

Student Researcher at AIBL (Probabilistic Generative Models for Biomolecule Generation and Drug Design)	2024.10 - present
Undergraduate Research Assistant at SNU MLLAB (Blackbox Optimization)	2024.07 - 2024.09
Undergraduate Research Assistant at CTA Lab (NP-hard Subgraph Matching Algorithms with Safety Conditions for Reduced Candidate Space)	2024.01 - 2024.08
Undergraduate Research Assistant at HYKE Group (Collective Motion in the Vicsek Particle Model, Hyperbolic Conservation Laws with Nonlocal Relaxation)	2022.12 - 2023.07

## Awards & Scholarships

AI Seoul Tech Graduate Scholarship (Seoul Scholarship Foundation)	2025
B.S. Degree Honors: Summa Cum Laude (Seoul National University)	2025
Presidential Science Scholarship (Korea Student Aid Foundation)	2023-2024
Dean's List (Department of Mathematical Sciences, SNU)	2023-2024
Professor Heo Sik Scholarship (Department of Mathematical Sciences, SNU)	2022
Gwanak Foundation Scholarship (Gwanak Foundation)	2021

## Teaching Experience

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

Peer Tutoring [Calculus Tutoring for First Year Students] (Taught a tutoring class for "Differential and Integral Calculus 1" during the Spring semester of 2023.)2023.03 - 2023.06

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Grants & Funding

► Strategic Hub for International Research Collaboration (SNU Office of Research Affairs)2026 - 2028

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Publications

\* Equal contribution, † Corresponding Author

Conference Papers

*TRACE: Your Diffusion Model is Secretly an Instance Edge Detector*, Sanghyun Jo\*, Ziseok Lee\*, Wooyeol Lee, Jonghyun Choi, Jaesik Park†, Kyungsu Kim†, The Fourteenth International Conference on Learning Representations (2026)

*Early Timestep Zero-Shot Candidate Selection for Instruction-Guided Image Editing*, Joowon Kim\*, Ziseok Lee\*, Donghyeon Cho, Sanghyun Jo, Yeonsung Jung, Kyungsu Kim†, 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*, Minyeong Hwang, Ziseok Lee, Kwang-Soo Kim, Kyungsu Kim†, Eunho Yang†, ICML 2025 Generative AI and Biology (GenBio) Workshop (2025)

Preprints

*ISAC: Training-Free Instance-to-Semantic Attention Control for Improving Multi-Instance Generation*, Sanghyun Jo\*, Wooyeol Lee\*, Ziseok Lee\*, Kyungsu Kim†, arXiv preprint arXiv:2505.20935 (2025)

*On the Collapse of Generative Paths: A Criterion and Correction for Diffusion Steering*, Ziseok Lee\*, Minyeong Hwang\*, Sanghyun Jo, Wooyeol Lee, Jihyung Ko, Young Bin Park, Jae-Mun Choi, Eunho Yang†, Kyungsu Kim†, arXiv preprint arXiv:2512.10339 (2025)

Academic Services

[2025.04] Assisted Professor Kyungsu Kim in reviewing submissions in the field of computer vision for ICCV 2025.

[2025.03] Assisted Professor Kyungsu Kim in reviewing two submissions in the field of flow matching for ICML 2025.

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 generative models (e.g., stochastic interpolants) and their applications to computer vision and biomedical science, particularly molecule generation for drug design.