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

Seoul National University 2025.03 - present

Integrated Masters with PhD Program in Biomedical Sciences

Seoul National University 2021.03 - 2025.02

B.S. in Mathematical Sciences (Major)

B.S. in Computer Science and Engineering (Double Major)

Degree Honors: Summa Cum Laude

Research Experience

Student Researcher at AIBL 2024.10 - present

Probabilistic Generative Models for Biomolecule Generation and Drug Design

Undergraduate Research Assistant at SNU MLLAB 2024.07 - 2024.09

Blackbox Optimization

Undergraduate Research Assistant at CTA Lab 2024.01 - 2024.08

NP-hard Subgraph Matching Algorithms with Safety Conditions for Reduced Candidate Space

Undergraduate Research Assistant at HYKE Group 2023.03 - 2023.07

Hyperbolic Conservation Laws with Nonlocal Relaxation

Undergraduate Research Internship at HYKE Group 2022.12 - 2023.07

Collective Motion in the Vicsek Model

Awards & Scholarships

Presidential Science Scholarship (Korea Student Aid Foundation) 2023-2024

Professor Heo Sik Scholarship 2022

Gwanak Foundation Scholarship 2021

Seminar/Teaching Experience

Teaching Assistant for [Introduction to Data Science] 2025.03 - 2025.06

Assisted Professor Kyungsu Kim in teaching a second-year undergraduate course, supporting students through discussion sessions.

Teaching Assistant for [Calculus 1] 2024.03 - 2024.06

Taught a course on Calculus 1. Was awarded **Excellent TA** and gave a case presentation.

Student-Directed Seminar [Understanding the Brain as a Complex System] 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.

Peer Tutoring [Calculus Tutoring for First Year Students] 2023.03 - 2023.06

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 in the field of computer vision for ICCV 2025.

Reviewer for ICML 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 probabilistic generative models (diffusion models, schrodinger bridges, stochastic interpolants) and their applications to biomedical data (drug discovery, molecule design).