

Jeongjae Lee

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RESEARCH INTERESTS

(1) Diffusion & flow-based models; (2) Reward alignment of generative models; (3) AI for Science and Health.

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST)

M.S., Graduate School of AI

GPA: 4.3/4.3, Advisor: Jong Chul Ye

Sep 2025 – Present
Seoul, Republic of Korea

Seoul National University

B.S., Electrical and Computer Engineering

GPA: 4.20/4.3, Rank: 7/158, Summa Cum Laude

On leave for 3 semesters due to military service (Feb 2021 - Aug 2022)

Mar 2019 – Aug 2024
Seoul, Republic of Korea

Gyeonggi Science High School

Suwon, Republic of Korea

Mar 2016 – Feb 2019

PUBLICATIONS & PREPRINTS

*First authors, †Corresponding authors. If absent, first/last authors are first/corresponding.

[W2] **Aligning Few-Step Generative Models by Amortizing Sample-based Variational Inference**

Jaewoo Lee*, Hyeongyu Kang*, Dohyun Kim, Kyuil Sim, Woocheol Shin, Minsu Kim, Taeyoung Yun, **Jeongjae Lee**, Sanghyeok Choi, Tabitha Edith Lee, Jong Chul Ye†, Jinkyoo Park†

ICML 2026 Workshop on Structured Probabilistic Inference & Generative Modeling. [paper] [code]

[W1] **Reward Score Matching: Unifying Reward-based Fine-tuning for Flow and Diffusion Models**

Jeongjae Lee*, Jinho Chang*, Jeongsol Kim†, Jong Chul Ye†

ICML 2026 Workshop on Structured Probabilistic Inference & Generative Modeling. (ORAL) [paper] [code]

[C1] **PCPO: Proportionate Credit Policy Optimization for Aligning Image Generation Models**

Jeongjae Lee, Jong Chul Ye

ICLR 2026. [paper] [code]

[J1] **Fast and Accurate Protein Structure Search with Foldseek**

Michel van Kempen, Stephanie S. Kim, Charlotte Tumescheit, Milot Mirdita, **Jeongjae Lee**, Cameron L. M. Gilchrist, Johannes Söding†, Martin Steinegger†

Nature Biotechnology, 2023. [paper] [code]

EXPERIENCE

Jun 2026 – Sep 2026

Yoshua Bengio Lab, Mila – Québec AI Institute

Visiting Student

ADVISOR: Danyal Rehman

Autoregressive protein generation (work in progress).

Improved RL post-training method for flow models (work in progress).

Sep 2025 – Present

BISPL Lab, KAIST

Graduate Research Assistant

ADVISOR: Jong Chul Ye

[C1] PCPO: Improved policy gradient objective for flow models via log hinge formulation.

[W1, Under review] RSM: Unified RL post-training methods for flow models, elucidating key design axes.

Sep 2024 – Aug 2025

BISPL Lab, KAIST

Postbaccalaureate Researcher

ADVISOR: Jong Chul Ye

Medical AI industrial research (co-op).

DRTech: Improved CycleGAN-based scatter correction model by alleviating blob artifacts.

Skylabs: Developed TimeVQVAE model for predicting respiratory rates from PPG data.

Jan 2023 – Dec 2023

DeepMetrics

Research Intern

ADVISOR: Hyun Oh Song

[Under review] VentPilot: Automated control of mechanical ventilators in ICUs. Analyzed ICU ventilator data and designed an auto-screening procedure to exclude physician actions during drug interventions.

Engineered features for decision-tree models, and developed code for dataset generation, visualization, and cross-validation-based model selection.

Jun 2022 – Dec 2022

Steinegger Lab, Seoul National University

Research Intern

ADVISOR: Martin Steinegger

[J1] Foldseek: Fast and sensitive comparisons of large protein structure sets. Developed optimized code for LDDT-alignment score computation using spatial hashing and SIMD instructions, achieving a 13× single-core speedup over Pymican. Built and maintained the automated protein database update pipeline for the Foldseek web server.

HONORS & AWARDS

Medical AI Scholarship

Korea Health Industry Development Institute, Sep 2022 – Feb 2024

Merit-based scholarship, 3M KRW/semester.

Presidential Science Scholarship

Korea Scholarship Foundation, Mar 2019 – Aug 2024

National scholarship for talented students in science and engineering, Full tuition + 2.5M KRW/semester.

REFERENCES

Danyal Rehman Postdoctoral Researcher, Mila – Québec AI Institute

Jong Chul Ye Professor, KAIST

Hyun Oh Song CEO, DeepMetrics

Professor, Seoul National University

Martin Steinegger Associate Professor, Seoul National University