

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

High School Diploma

Mar 2016 – Feb 2019

Suwon, Republic of Korea

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. (**BEST PAPER; 2/270 = 0.74%**) [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

Yoshua Bengio Lab, Mila – Québec AI Institute

Research Intern

ADVISOR: Danyal Rehman

Developing autoregressive models for protein structure generation.

Developing improved RL post-training methods for flow-based generative models.

Jun 2026 – Sep 2026

BISPL Lab, KAIST

Graduate Research Assistant

ADVISOR: Jong Chul Ye

[C1] PCPO: Developed a stable log-hinge based policy-gradient objective for diffusion & flow-based models.

[W1, Under review] RSM: Developed a unifying framework for RL post-training methods for diffusion & flow-based models.

Sep 2025 – Present

BISPL Lab, KAIST

Postbaccalaureate Researcher

ADVISOR: Jong Chul Ye

Conducted medical AI industrial research in collaboration with DRTech and Skylabs.

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

Skylabs: Developed a TimeVQVAE model for respiratory-rate prediction from PPG data.

Sep 2024 – Aug 2025

DeepMetrics

Research Intern

ADVISOR: Hyun Oh Song

[Under review] VentPilot: Developed data-processing, visualization, and model-selection pipelines for automated ventilator control in ICUs. Designed an auto-screening procedure to exclude physician actions during drug interventions. Designed clinically informed features for decision-tree models through iterative data analysis and consultation with clinicians.

Jan 2023 – Dec 2023

Research Intern

ADVISOR: Martin Steinegger

[J1] Foldseek: Optimized 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

SPIGM Workshop Best Paper, ICML 2026

Jul 2026

[W1] Reward Score Matching; one of 2 Best Paper Award recipients and 6 oral presentations among 270 submissions.

Medical AI Scholarship

Sep 2022 – Feb 2024

Merit-based scholarship from the Korea Health Industry Development Institute; KRW 3M per semester.

Presidential Science Scholarship

Mar 2019 – Aug 2024

National scholarship for talented students in science and engineering from the Korea Scholarship Foundation; full tuition + KRW 2.5M per semester.

SERVICE

Conference Reviewer: NeurIPS (2026)

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