Jaemin Kim

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Research Interest

Aiming to improve the controllability of advance generative models, including diffusion models and Large Language Models (LLMs). Recently contributed to this goal by exploring efficient guidance methods, such as training-free approaches and general-purpose strategies.

Education

Korea Advanced Institute of Science and Technology (KAIST) Mar 2025 - Now
Ph.D. in Artificial Intelligence *Advisor: Prof. Jong Chul Ye*

Korea Advanced Institute of Science and Technology (KAIST) Mar 2023 - Feb 2025
M.S. in Artificial Intelligence *Advisor: Prof. Jong Chul Ye*

Korea Advanced Institute of Science and Technology (KAIST) Mar 2016 - Feb 2023
B.S. in Bio and Brain Engineering, Electrical Engineering (Double Major) *GPA: 3.96/4.3 (Magna Cum Laude)*

Karlsruhe Institute of Technology (KIT) Sep 2019 - Feb 2020
Electrical Engineering and Information Technology (Exchange Student) *Karlsruhe, Germany*

Publications *: Equal Contribution

[P3] **Training-Free Reward-Guided Image Editing via Trajectory Optimal Control** *Preprint 2025*
Jinho Chang*, **Jaemin Kim***, Jong Chul Ye

[C4] **Free^{2}Guide: Gradient-Free Path Integral Control for Enhancing Text-to-Video Generation with Large Vision-Language Models** *ICCV 2025*
Jaemin Kim, Bryan S Kim, Jong Chul Ye

[P2] **Universal Reasoner: A Single, Composable Plug-and-Play Reasoner for Frozen LLMs** *Preprint 2025*
Jaemin Kim*, Hangeol Chang*, Hyunmin Hwang*, Choonghan Kim, Jong Chul Ye

[C3] **Optical-Flow Guided Prompt Optimization for Coherent Video Generation** *CVPR 2025*
Hyelin Nam*, **Jaemin Kim***, Dohun Lee, Jong Chul Ye

[C2] **Derivative-Free Diffusion Manifold-Constrained Gradient for Unified XAI** *CVPR 2025*
Won Jun Kim*, Hyungjin Chung*, **Jaemin Kim***, Sangmin Lee, Byeongsu Sim, Jong Chul Ye

[C1] **Generalized Consistency Trajectory Models for Image Manipulation** *ICLR 2025*
Beomsu Kim*, **Jaemin Kim***, Jeongsol Kim, Jong Chul Ye

[P1] **HiCBridge: Resolution Enhancement of Hi-C Data Using Direct Diffusion Bridge** *Preprint 2024*
Jaemin Kim*, Jong Chul Ye

Patents

Method and Apparatus for Approximating Gradient of Artificial Neural Network Model 2025
- (South Korea) Patent No.10-2025-0145337

A Single, Composable Plug-and-play Reasoner for Frozen LLMs 2025
- (South Korea) Patent No.10-2025-0132734

Honors and Awards

Dongwon-KAIST scholarship Mar 2023 - Feb 2025
Full scholarship for tuition and stipend

Baden-Württemberg Stipendium Sep 2019 - Feb 2020
Scholarship for international students to study at a university in Baden-Württemberg

South Korea National Science & Technology Scholarship Mar 2018 - Mar 2020
Scholarship for attracting outstanding talents

Academic Activities

Reviewer
ICLR 2026

Persident, Student Council May 2025 - Now
KAIST AI

Teaching Assistant Mar 2025 - Jun 2025
KAIST - AI618: Generative Models and Unsupervised Learning

References

Jong Chul Ye M.S., Ph.D. Advisor
jong.ye@kaist.ac.kr *Endowed Chair Professor, Kim Jaechul Graduate School of Artificial Intelligence, KAIST*