# 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] **Dementia-R1: Reinforced Pretraining and Reasoning from Unstructured Clinical Notes for Real-World Dementia Prognosis** *Preprint 2026*
Choonghan Kim*, Hyunmin Hwang*, Hangeol Chang*, **Jaemin Kim***, Jinse Park, Jae-Sung Lim, Jong Chul Ye

[C5] **Training-Free Reward-Guided Image Editing via Trajectory Optimal Control** *ICLR 2026*
Jinho Chang*, **Jaemin Kim***, Jong Chul Ye

[C4] **Free$^2$Guide: Training-Free Text-to-Video Alignment using Image LVLM** *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

**32nd Samsung Humantech Paper Award** — Silver Prize
*Universal Reasoner: A Single, Composable Plug-and-Play Reasoner for Frozen LLMs* — *Track: Signal Processing*

**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*