

EDUCATION

KAIST

Aug 2024 – Present

Ph.D. in Artificial IntelligenceAdvisor: [Jinwoo Shin](#)

KAIST

Mar 2020 – Aug 2024

B.S. in School of ComputingAdvisor: [Sung-Eui Yoon](#)

RESEARCH INTERESTS

My goal is to build generally intelligent robots that can understand the real world and adapt to diverse situations. To achieve this, my research focuses on Vision-Language-Action (VLA) models, specifically on enhancing their world understanding and strengthening embodied reasoning. To this end, I have conducted research on aligning VLMs and LLMs through reinforcement learning, improving the spatiotemporal understanding of vision models, and optimizing policies with RL.

Keywords: VLA, LLM, VLM, RL

PUBLICATIONS (* denotes equal contribution)

- [P7] RoboAlign: Reinforcement Learning for Action-Aligned Multimodal Large Language Models
Dongyoung Kim, Sumin Park, Woomin Song, Seungku Kim, Taeyoung Kim, [Huiwon Jang](#), [Jaehyung Kim](#), [Younggyo Seo](#), [Jinwoo Shin](#)
Preprint, 2025
- [P6] INFUSER: Injecting Synthetic Failures for Self-Correcting Embodied Agents
Byungjun Yoon, **Dongyoung Kim**, Jaehyun Nam, Wook Jung, [Jinwoo Shin](#)
Preprint, 2025
- [P5] Contrastive Representation Regularization for Vision-Language-Action Models
Taeyoung Kim, Jimin Lee, Myungkyu Koo, **Dongyoung Kim**, Kyungmin Lee, Changyeon Kim, [Younggyo Seo](#), [Jinwoo Shin](#)
Preprint, 2025
- [P4] Dual-Stream Diffusion for World-Model Augmented Vision-Language-Action Model
John Won, Kyungmin Lee, [Huiwon Jang](#), **Dongyoung Kim**, [Jinwoo Shin](#)
Preprint, 2025
- [P3] Verifier-free Test-Time Sampling for Vision Language Action Models
Suhyeok Jang, **Dongyoung Kim**, Changyeon Kim, Youngsuk Kim, [Jinwoo Shin](#)
Preprint, 2025
- [P2] Collaborative LLM Inference via Planning for Efficient Reasoning
Byeongchan Lee, Jonghoon Lee, **Dongyoung Kim**, [Jaehyung Kim](#), [Jinwoo Shin](#)
Preprint, 2025
- [P1] SpatialBoost: Enhancing Visual Representation through Language-Guided Reasoning
Byoungwooo Jeon*, **Dongyoung Kim***, [Huiwon Jang](#), [Jinwoo Shin](#)
Preprint, 2025

- [C6] Robot-R1: Reinforcement Learning for Enhanced Embodied Reasoning in Robotics
Dongyoung Kim, Sumin Park, Huiwon Jang, Jinwoo Shin, Jaehyung Kim*, Younggyo Seo*
Neural Information Processing Systems (NeurIPS), 2025
- [C5] Debiasing Online Preference Learning via Preference Feature Preservation
Dongyoung Kim, Jinsung Yoon, Jinwoo Shin, Jaehyung Kim
Annual Meeting of the Association for Computational Linguistics (ACL), 2025 (Findings)
- [C4] Spread Preference Annotation: Direct Preference Judgment for Efficient LLM Alignment
Dongyoung Kim, Kimin Lee, Jinwoo Shin, Jaehyung Kim
International Conference on Learning Representations (ICLR), 2025
Oral Presentation (207/11672=1.77%)
- [C3] Learning to Correct for QA Reasoning with Black-box LLMs
 Jaehyung Kim, **Dongyoung Kim**, Yiming Yang
Conference on Empirical Methods in Natural Language Processing (EMNLP), 2024 (Main)
- [C2] Visual Representation Learning with Stochastic Frame Prediction
 Huiwon Jang, **Dongyoung Kim**, Junsu Kim, Jinwoo Shin, Pieter Abbeel, Younggyo Seo
International Conference on Machine Learning (ICML), 2024
- [C1] Accelerating Reinforcement Learning with Value-Conditional State Entropy Exploration
Dongyoung Kim, Jinwoo Shin, Pieter Abbeel, Younggyo Seo
Neural Information Processing Systems (NeurIPS), 2023
- [W1] Training-free LLM Verification via Recycling Few-shot Examples
 Dongseok Lee, Jimyung Hong, **Dongyoung Kim**, Jaehyung Kim
International Conference on Machine Learning (ICML) Workshop ES-FoMo-III, 2025

HONORS AND AWARDS

- Recipient, Google Conference Scholarships (APAC), May 2025
- Travel Award, Conference on Neural Information Processing Systems (NeurIPS), 2023
- Recipient, KAIST Presidential Fellowship, 2020 – 2024

WORK EXPERIENCE

RLWORLD Inc.

June 2025 – Aug 2025

Research Intern (Advisor: Jinwoo Shin)

SERVICES

Reviewer

- NeurIPS