

Seongwoong Shim

Ph.D. Candidate @ Korea University | Department of Artificial Intelligence

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Research Interest

I push the boundaries of intelligent systems by leveraging **reinforcement learning** to enhance both the performance and efficiency of **modern foundation models**.

- **Enhancing Foundation Models:** Language Models [C6], Multimodal Models [C5], Diffusion Models [C2]
- **Reinforcement Learning:** Offline Learning [C1, C4], Skill Discovery [C3]

Education

Korea University, Integrated M.S. & Ph.D.

Mar. 2022 – Present

— Department of Artificial Intelligence (GPA: 4.25/4.5)

— Advisor: Prof. Byung-Jun Lee

Academic Credit Bank System, B.S.

Oct. 2020 – Feb. 2022

— Department of Computer Engineering (GPA: 4.46/4.5)

Selected Publications

*: equal contribution / P: pre-print / C: conference / J: journal / w: workshop

[C6] **Beyond RAG vs. Long-Context: Learning Distraction-Aware Retrieval for Efficient Knowledge Grounding**

ICLR 2026

Seongwoong Shim*, Myunsoo Kim*, Jae Hyeon Cho, Byung-Jun Lee

International Conference on Learning Representations (ICLR 2026) [arXiv] [Code]

[C5] **FALCON: False-Negative Aware Learning of Contrastive Negatives in Vision-Language Pretraining**

CVPR 2026

Myunsoo Kim*, Seongwoong Shim*, Byung-Jun Lee

Conference on Computer Vision and Pattern Recognition (CVPR 2026) [arXiv] [Code]

Other Publications

[J1] **Neural MCTS with LLM Guidance for Effective Program Synthesis on Abstraction and Reasoning Corpus**

ECML PKDD 2026

Jinwoo Jeon, Seongwoong Shim, Sejin Kim, Sundong Kim, Byung-Jun Lee

Machine Learning (ECML PKDD 2026 Journal Track) 2026 [Paper]

[C4] **Prior-Guided Diffusion Planning for Offline Reinforcement Learning**

NeurIPS 2025

Donghyeon Ki, JunHyeok Oh, Seongwoong Shim, Byung-Jun Lee

Neural Information Processing Systems (NeurIPS 2025) [arXiv] [Code]

[C3] **NBDI: A Simple and Effective Termination Condition for Skill Extraction from Task-Agnostic Demonstrations**

ICML 2025

Myunsoo Kim*, Hayeong Lee*, Seongwoong Shim, JunHo Seo, Byung-Jun Lee

International Conference on Machine Learning (ICML 2025) [arXiv] [Code]

[C2] **Adaptive Non-Uniform Timestep Sampling for Accelerating Diffusion Model Training**

CVPR 2025

Myunsoo Kim*, Donghyeon Ki*, Seongwoong Shim, Byung-Jun Lee

Conference on Computer Vision and Pattern Recognition (CVPR 2025) [arXiv] [Code]

[C1] **Offline Imitation Learning by Controlling the Effective Planning Horizon**

ICPRAI 2024

Hee-Jun Ahn*, Seongwoong Shim*, Byung-Jun Lee

International Conference on Pattern Recognition and Artificial Intelligence (ICPRAI 2024) [arXiv]