Myungkyu Koo

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Research Interests

My research focuses on advancing computer vision and robotics foundation models. From this perspective, I am especially interested in enhancing models' comprehensive world understanding through visual signals, and effectively leveraging this understanding for diverse multi-modal generation tasks. In particular, I am currently working on Vision-Language-Action models (VLAs) to enable generalizable and dexterous robot manipulation.

Keywords: Computer vision, Robotics foundation models, Vision-Language-Action models (VLAs)

Education

Korea Advanced Institute of Science and Technology (KAIST) — Seoul, Korea
Ph.D. Student in Artificial Intelligence — Mar. 2024 - Present
Advisor: Jinwoo Shin

Korea Advanced Institute of Science and Technology (KAIST) — Daejeon, Korea
B.S. in Electrical Engineering (minor in Computer Science) — Mar. 2018 - Feb. 2024
Magna Cum Laude (GPA: 3.86/4.3)

Publications

Conferences (*: Equal Contribution, †: Equal Advising)

C1 **HAMLET: Switch your Vision-Language-Action Model into a History-Aware Policy**
Myungkyu Koo*, Daewon Choi*, Taeyoung Kim, Kyungmin Lee, Changyeon Kim, Youngyo Seo†, Jinwoo Shin†
International Conference on Learning Representations (ICLR), 2026.

Preprints (*: Equal Contribution, †: Equal Advising)

P2 **Contrastive Representation Regularization for Vision-Language-Action Models**
Taeyoung Kim, Jimin Lee, Myungkyu Koo, Dongyoung Kim, Kyungmin Lee, Changyeon Kim, Younggyo Seo†, Jinwoo Shin†

P1 **FontAdapter: Instant Font Adaptation in Visual Text Generation**
Myungkyu Koo, Subin Kim, Sangkyung Kwak, Jaehyun Nam, Seojin Kim, Jinwoo Shin

Experience

Research Intern — Pion Corporation — Jul. 2023 - Dec. 2023
- Developed an image-to-video model pipeline that generates 3D rotation video assets from a single-view product image, enabling automated creation of advertisement videos based on product listing pages.

Undergraduate Research Intern — CILAB, KAIST — Mar. 2020 - Dec. 2020
- Participated in a research project on developing a monocular depth estimation model.

Honors and Awards

Recipient, Academic Excellence Award (Dean's List) — Jun. 2021
Recipient, National Science & Technology Scholarship — Mar. 2018 - Feb. 2024
Recipient, Hansung Scholarship for Gifted Students — Feb. 2016

References

Prof. Jinwoo Shin, Full Professor at KAIST
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