

Heeseong Shin

hsshin98@kaist.ac.kr | Homepage | Google Scholar | LinkedIn | Github

Research Interest

My main research interest lies in solving practical tasks in an efficient manner through leveraging foundation models. This includes tasks such as **image segmentation**, **3D reconstruction**, and **robotic control**, with the aid from **vision-language models** and **diffusion models**.

Education

- | | |
|---|-----------------------|
| KAIST , M.S.&Ph.D in Artificial Intelligence | Sep. 2024 - Present |
| • Advisor: Seungryong Kim | |
| Korea University , M.S.&Ph.D in Computer Science | Mar. 2023 – Aug. 2024 |
| • Advisor: Seungryong Kim | |
| Korea University , B.S. in Computer Science | Mar. 2017 – Feb. 2023 |
| • <i>Graduated with Honor</i> | |

Experience

- | | |
|---|-----------------------|
| Research Intern , Naver AI Lab – Seongnam, Korea | Dec. 2024 - Jun. 2025 |
| • Interned in backbone research group working with Taekyung Kim, Byeongho Heo, and Dongyoon Han | |
| • Published “Exploring Conditions for Diffusion models in Robotic Control” in arXiv | |

Publications

(*: equal contribution)

Exploring Conditions for Diffusion models in Robotic Control

Heeseong Shin, Byeongho Heo, Dongyoon Han, Seungryong Kim and Taekyung Kim
Preprint

Visual Representation Alignment for Multimodal Large Language Models

Heeji Yoon*, Jaewoo Jung*, Junwan Kim*, Hyungyu Choi, Heeseong Shin, Sangbeom Lim, Honggyu An, Chaehyun Kim, Jisang Han, Donghyun Kim, Chanhoe Eom, Sunghwan Hong and Seungryong Kim
Preprint

Seg4Diff: Unveiling Open-Vocabulary Segmentation in Text-to-Image Diffusion Transformers

Chaehyun Kim, Heeseong Shin, Eunbin Hong, Heeji Yoon, Anurag Arnab, Paul Hongsuck Seo, Sunghwan Hong and Seungryong Kim
Advances in Neural Information Processing Systems (NeurIPS), San Diego, 2025

S⁴M: Boosting Semi-Supervised Instance Segmentation with SAM

Heeji Yoon*, Heeseong Shin*, Eunbin Hong, Hyunwook Choi, Daun Jeong, Hansang Cho, and Seungryong Kim
IEEE International Conference on Computer Vision (ICCV), Honolulu, 2025

PF3plat: Pose-Free Feed-Forward 3D Gaussian Splatting

Sunghwan Hong*, Jaewoo Jung*, Heeseong Shin, Jisang Han, Jiaolong Yang, Seungryong Kim, and Chong Luo
International Conference on Machine Learning (ICML), Vancouver, 2025

Towards Open-Vocabulary Semantic Segmentation Without Semantic Labels

Heeseong Shin, Chaehyun Kim, Sunghwan Hong, Seokju Cho, Anurag Arnab[†], Paul Hongsuck Seo[†], and Seungryong Kim[†]
Advances in Neural Information Processing Systems (NeurIPS), Vancouver, 2024

Large Language Models are Frame-level Directors for Zero-shot Text-to-Video Generation

Susung Hong, Junyoung Seo, [Heeseong Shin](#), Sunghwan Hong, and Seungryong Kim.

First Workshop on Controllable Video Generation at ICML (ICMLW), Vienna, 2024

Unifying Correspondence, Pose and NeRF for Pose-Free Novel View Synthesis from Stereo Pairs

Sunghwan Hong, Jaewoo Jung, [Heeseong Shin](#), Jiaolong Yang, Seungryong Kim, and Chong Luo

IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Seattle, 2024

Highlight

CAT-Seg: Cost Aggregation for Open-Vocabulary Semantic Segmentation

Seokju Cho*, [Heeseong Shin](#)*, Sunghwan Hong, Anurag Arnab, Paul Hongsuck Seo[†], and Seungryong Kim[†]

IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Seattle, 2024

Highlight

Projects

Samsung Electro-mechanics

Jul. 2023 - Jun. 2024

- Developed semi-supervised method for MLCC anomaly segmentation

Samsung Electronics

Jan. 2023 - Jun. 2023

- Developed Transformer-based model for de-mosaicing camera sensor images

Teaching Experience

Teaching Assistant, Korea University

Spring 2024

- DATA302: Introduction to Computer Vision and Applications

Teaching Assistant, Samsung Electronics

Sep. 2024 - Nov. 2024

- Multimodal Learning

Teaching Assistant, Samsung Electronics

Sep. 2023

- Computer Vision Learning Course

Teaching Assistant, Samsung Electronics

Sep. 2023 - Nov. 2023

- Multimodal Learning

Academic Services

Reviewer: NeurIPS (2024, 2025), AAAI (2025), CVPR (2024, 2025, 2026), ICLR (2026), TPAMI

Personal Skills

Languages: Korean (Native), English (Proficient)

Technical: C++, C#, C, Java, Python, PyTorch

Military Services: Discharged Sergeant (Intelligence Operations) - *Fulfilled obligatory military service in Republic of Korea Army*