(+82) 10-3222-3295
seohoiki3215@snu.ac.kr
https://seohoiki3215.github.io

Hoigi Seo M.S. & Ph.D. Student

Education

Seoul National University Seoul, Republic of Korea
B.E. in Electrical and Computer Engineering 2018 - 2024

Seoul National University Seoul, Republic of Korea
Integrated M.S. and Ph.D. in Electrical and Computer Engineering 2024 - Present

- Advisor: Prof. Se Young Chun
- Research area: Diffusion Generative Model, Multi-Modal Large Language Model, Efficient Generative Model

Publications (selected)

1. On Epistemic Uncertainty of Visual Tokens for Object Hallucinations in Large Vision-Language Models.
Hoigi Seo*, D U Kang*, H Cho, J Lee & S Y Chun. NeurIPS, 2025. (*co-first authors)
2. Skrr: Skip and Re-use Text Encoder Layers for Memory Efficient Text-to-Image Generation.
Hoigi Seo*, W Jeong*, J Seo & S Y Chun. ICML, 2025. (*co-first authors)
3. Efficient Personalization of Quantized Diffusion Model without Backpropagation.
Hoigi Seo*, W Jeong*, K Lee & S Y Chun. CVPR & CVPRW, 2025. (*co-first authors)
4. Harmonization for a black-box deep learning model.
M Kim, H Jeong, **Hoigi Seo**, W Jeong, S Y Chun & J Lee. ISMRM (**Oral, Summa Cum Laude, AMPC select**), 2025
5. INTRA: Interaction Relationship-Aware Weakly Supervised Affordance Grounding.
J H Jang*, **Hoigi Seo*** & S Y Chun. ECCV & ECCVW (**Oral**), 2024. (*co-first authors)
6. BeyondScene: Higher-Resolution Human-Centric Scene Generation with Pretrained Diffusion.
G Kim*, H Kim*, **Hoigi Seo***, D U Kang* & S Y Chun. ECCV, 2024. (*co-first authors)

Preprints

1. Erasing Thousands of Concepts: Towards Scalable and Practical Concept Erasure for Text-to-Image Diffusion Models.
Hoigi Seo*, B H Lee*, Jaehyun Cho, Sungjin Lim, & S Y Chun. *CVPR Under review*, 2026. (*co-first authors)
2. Training-free, Perceptually Consistent Low-Resolution Previews with High-Resolution Image for Efficient Workflows of Diffusion Models.
Hoigi Seo*, W Jeong*, & S Y Chun. *CVPR Under review*, 2026. (*co-first authors)
3. Training-free Mixed-Resolution Latent Upsampling for Spatially Accelerated Diffusion Transformers.
W Jeong*, K Lee*, **Hoigi Seo** & S Y Chun. *CVPR Under review*, 2026. (*co-first authors)
4. Tunable Porous Collagen Hydrogels as a Physiologically Relevant Platform for Extrachromosomal DNA-Associated Colorectal Cancer Research
S Jo, J Shon, S An, Y Nam, D Choi, S Lee, **Hoigi Seo**, S Y Chun & H Kim. *Bioactive Materials Under review*, 2025.
5. Geometrical Properties of Text Token Embeddings for Strong Semantic Binding in Text-to-Image Generation.
Hoigi Seo*, J Bang*, H Lee*, J Lee, B H Lee & S Y Chun. *arXiv preprint*, 2025. (*co-first authors)
6. DITTO-NeRF: Diffusion-based Iterative Text To Omni-directional 3D Model.
Hoigi Seo*, H Kim*, G Kim* & S Y Chun. *arXiv preprint*, 2023. (*co-first authors)

Patents

1. **Training-free Industrial Defect Segmentation.**
   S. Y. Chun, D. U. Kang, H. Kim, J. H. Jang, B. H. Lee, **Hoigi Seo**. Korean Patent, Filed. 2025.
2. **Device and Method For Affordance Grounding.**
   S. Y. Chun, J. H. Jang, **Hoigi Seo**. Korean Patent, Filed. No. 10-2025-0029227, 2025.
3. **Device and Method for Extracting High-Dimensional Gene Features.**
   S. Y. Chun, **Hoigi Seo**, H. Bae, D. U. Kang, H. Kim. Korean Patent, Filed. No. 10-2025-0014990, 2025.
4. **Higher-Resolution Human-Centric Scene Generation With Pretrained Diffusion.**
   S. Y. Chun, G. Kim, H. Kim, **Hoigi Seo**. Korean Patent, Filed, No. 10-2024-0115484, 2024 / U.S. Patent Application, Filed, No. 19/019,060, 2025

Awards & Honors

Excellent Research Talent Fellowship | Korea Research Foundation 2025 Fall
Brain Korea 21 Scholarship | Korea Research Foundation 2025
Brain Korea 21 Scholarship | Korea Research Foundation 2024
Academic Excellence Scholarship | Seoul National University, ECE 2023

Projects

ecDNA Detection (Project lead) | Ministry of Science and ICT, ROK 2023 - Present
Extra-chromosomal DNA (ecDNA) detection and associated gene discovery from FISH images and gene profiles.

AI for Human-Machine Teaming | US Air Force & ROK IITP 2025 - Present
Development of human-robot interaction (HRI) and decision-making that can enable robots to collaborate naturally with humans with hazy oracle.

Efficient Personalization | Samsung Mobile Experience (MX) 2024 - 2025
Memory and time efficient text-to-image synthesis and personalization for on-device deployment.

Industrial Defect Segmentation | Samsung Device Solution (DS) 2024 - 2025
Segmentation and detection of defects on wafer and industrial products.

Skills

Language: English (professional), Korean (native).
Programming Language: Python, C, C++.
Deep Learning Framework: PyTorch, TensorFlow.

Other Publications

1. Mitigating Hallucinations in Large Vision-Language Models via Norm-Guided Visual Filtering
   H Cho, **Hoigi Seo**, D U Kang, J Lee & S Y Chun. Conference on Electronics, Semiconductor and AI, 2025.
2. Towards Personalization of Generative Models Via Zeroth-Order Optimization
   W Jeong, **Hoigi Seo**, & S Y Chun. Korea Signal Processing Conference, 2024.

Other Experiences

Military Service | Republic of Korea Army 2020 - 2021
Served as a Situation Room Soldier in the 3rd Guard Battalion, 17th Infantry Division. Honorably discharged as Sergeant.