

Woojung Han

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SUMMARY

I am broadly interested in learning algorithms that bridge **visual understanding** and **multi-modal generative modeling**, with a particular focus on label-efficient semantic segmentation (weakly supervised, unsupervised, and open-vocabulary) and multimodal generation, including image/video generation and medical-image foundation models.

EDUCATION

Ph.D. in Computer Science

Yonsei University

Advisor: Seong Jae Hwang

Seoul, South Korea

Mar 2022 – Present

B.S. in Human Intelligence and Information Engineering

Sangmyung University

Advisor: Eui Chul Lee

Seoul, South Korea

Mar 2017 – Feb 2022

PUBLICATIONS (* EQUAL CONTRIBUTION)

Conference Publications

- Interpretable Motion-Attentive Maps: Spatio-Temporally Localizing Concepts in Video Diffusion Transformers*
Youngjun Jun, Seil Kang, Woojung Han, Seong Jae Hwang
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2026
- Rare Text Semantics Were Always There in Your Diffusion Transformer*
Woojung Han*, Seil Kang*, Dayun Ju, Seong Jae Hwang
Neural Information Processing System (**NeurIPS**), 2025 [\[paper\]](#)
- PRETI: Patient-Aware Retinal Foundation Model via Metadata-Guided Representation Learning*
Yeonkyung Lee, Woojung Han, Youngjun Jun, Hyeonmin Kim, Junkyung Cho, Seong Jae Hwang
Conference on Medical Image Computing and Computer-Assisted Intervention (**MICCAI**), 2025 [\[paper\]](#)
Early Accepted (Acceptance Rate <9%)
- Pathology-Aware Adaptive Watermarking for Text-Driven Medical Image Synthesis*
Chanyoung Kim*, Dayun Ju*, Jinyeong Kim, Woojung Han, Roberto Alcover-Couso, Seong Jae Hwang
Conference on Medical Image Computing and Computer-Assisted Intervention (**MICCAI**), 2025 [\[paper\]](#)
Early Accepted (Acceptance Rate <9%)
- Spatial Transport Optimization by Repositioning Attention Map for Training-Free Text-to-Image Synthesis*
Woojung Han, Yeonkyung Lee, Chanyoung Kim, Kwanghyun Park, Seong Jae Hwang
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2025 [\[paper/page\]](#)
- Distilling Spectral Graph for Object-Context Aware Open-Vocabulary Semantic Segmentation*
Chanyoung Kim, Dayun Ju, Woojung Han, Ming-Hsuan Yang, Seong Jae Hwang
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2025 [\[paper/page\]](#)
- Advancing Text-Driven Chest X-Ray Generation with Policy-Based Reinforcement Learning*
Woojung Han*, Chanyoung Kim*, Dayun Ju, Yumin Shim, Seong Jae Hwang
Conference on Medical Image Computing and Computer-Assisted Intervention (**MICCAI**), 2024 [\[paper/project\]](#)
Spotlight (Acceptance Rate <3.4%)
- EAGLE: Eigen Aggregation Learning for Object-Centric Unsupervised Semantic Segmentation*
Woojung Han*, Chanyoung Kim*, Dayun Ju, Seong Jae Hwang
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024 [\[paper/ page\]](#)
Highlight (Acceptance Rate <2.8%)
- Effect of Time Window Size for Converting Frequency Domain in Real-Time Remote Photoplethysmography Extraction*
Yu Jin Shin, Woojung Han, Kun Ha Suh & Eui Chul Lee
Conference on Intelligent Human Computer Interaction (**IHCI**), 2021 [\[paper\]](#)

Journal Publications

1. *Complementary Branch Fusing Class and Semantic Knowledge for Robust Weakly Supervised Segmentation*
Woojung Han, Seil Kang, Kyobin Choo, Seong Jae Hwang
Pattern Recognition(PR) [Impact Factor: 7.5], 2024 [paper]

Technical Reports

1. *Physics in 2-Steps: Locking Motion Priors Before Visual Refinement Erases Them*
Woojung Han, Seil Kang, Youngjun Jun, Min-Hung Chen, Fu-En Yang, Seong Jae Hwang
2. *Real-Time Visual Attribution Streaming in Thinking Model*
Seil Kang, Woojung Han, Junhyeok Kim, Jinyeong Kim, Youngeun Kim, Seong Jae Hwang

Workshop Papers

1. *Spatial Transport Optimization by Repositioning Attention Map for Training-Free Text-to-Image Synthesis*
Woojung Han, Yeonkyung Lee, Chanyoung Kim, Kwanghyun Park, Seong Jae Hwang
3rd Workshop on Generative Models for Computer Vision @ CVPR 2025(CVPR Workshop), 2025 [paper]
2. *Distilling Spectral Graph for Object-Context Aware Open-Vocabulary Semantic Segmentation*
Chanyoung Kim, Dayun Ju, Woojung Han, Ming-Hsuan Yang, Seong Jae Hwang
The 4th Workshop on Transformers for Vision @ CVPR 2025(CVPR Workshop), 2025 [paper]
3. *EAGLE: Eigen Aggregation Learning for Object-Centric Unsupervised Semantic Segmentation*
Woojung Han*, Chanyoung Kim*, Dayun Ju, Seong Jae Hwang
Causal and Object-Centric Representations for Robotics @ CVPR 2024(CVPR Workshop), 2024 [paper]

EXPERIENCES

Lab: Medical Imaging and Computer Vision Lab

Yonsei University (Advisor: Seong Jae Hwang)

Mar 2022 – Present
Seoul, South Korea

- Generative AI
- Weakly Supervised/Unsupervised Semantic Segmentation
- Diffusion Models in Medical Imaging

Lab Intern: Algorithm Machine Intelligence Lab

POSTECH (Advisor: Tae-Hyun Oh)

Jun 2021 – Aug 2021
Remote – Pohang, South Korea

- Efficient Human Behavior Understanding
- Human Mesh Recovery

Lab Intern: Computer Vision Lab

Korea University (Advisor: Sangpil Kim)

Mar 2021 – Jun 2021
Seoul, South Korea

- Hand Grasp Type Estimation

Lab Intern: Pattern Recognition Lab

Sanmyung University (Advisor: Eui Chul Lee)

Sep 2018 – Nov 2020
Seoul, South Korea

- Real-time Remote Photoplethysmography Extraction

+ Attended Google BootCamp in 2022

PROFESSIONAL SERVICES

*** Teaching Experience**

Samsung Korea	Teaching DX & AI Project	2022
Samsung Korea	Teaching AI & DX	2022
NAVER + MOBULLABS	Coach Machine Learning and Deep Learning (AI)	2020, 2021, 2022
KT AIVLE	Coach of AI	2021
LG Academy AI Camp	Coach of AI	2021

*** Outsourcing**

FaceSwap		2021
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HONORS & AWARDS

- Graduation Project 2021 (2nd) Project: Lip Reading
- MAIC Surgical Instruments Segmentation 2021 (3rd) Project: Medical Segmentation
- Korea SW Central University Hackton 2021 (3rd) Project: Health Care Body Position
- SM AI Competition 2020 (2nd & 4rd) Project: Image Inpainting & Music Recommendation

CERTIFICATIONS

- Tensorflow Developer Certificate 2022
- YONSEI Medical Scientist Training Program 2023
- Summer Program in University of Southern California 2023
- Best Academic Paper Award at Yonsei University