

# Woojung Han

Website | [Google Scholar](#) | [LinkedIn](#) | [GitHub](#)

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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 text-to-image synthesis 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

1. *Rare Text Semantics Were Always There in Your Diffusion Transformer*  
Seil Kang\*, Woojung Han\*, Dayun Ju, Seong Jae Hwang  
Neural Information Processing System (**NeurIPS**), 2025 [\[paper\]](#)
2. *PRET: 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%)
3. *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%)
4. *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 [\[paper/page\]](#)
5. *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 [\[paper/page\]](#)
6. *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%)
7. *EAGLE: Eigen Aggregation Learning for Object-Centric Unsupervised Semantic Segmentation*  
Chanyoung Kim\*, Woojung Han\*, Dayun Ju, Seong Jae Hwang  
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024 [\[paper/ page\]](#)  
Highlight (Acceptance Rate <2.8%)
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 [\[paper\]](#)

### 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*  
Chanyoung Kim\*, Woojung Han\*, Dayun Ju, Seong Jae Hwang  
Causal and Object-Centric Representations for Robotics @ CVPR 2024(**CVPR Workshop**), 2024 [\[paper\]](#)

## EXPERIENCES

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### **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

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### **\* Conference Reviewer**

BMVC British Machine Vision Conference

BMVC 2024,2025

WACV IEEE/CVF Winter Conference on Applications of Computer Vision

2024

CVPR IEEE/CVF Conference on Computer Vision and Pattern Recognition

2025

### **\* 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

## HONORS & AWARDS

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- 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

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- 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