

Sunyoung Jung

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Biography

I am a Third-year Ph.D. student at Yonsei University, advised by **Prof. Seong Jae Hwang**, in the **Medical Imaging and Computer Vision (MICV)**. My doctoral research explores the capabilities of **generative models** within the domain of computer vision. I am actively working on problems in **video and image generation, motion transfer in video generation, and diffusion models**.

Education

Ph.D. in Artificial Intelligence

Yonsei University

Advisor: Seong Jae Hwang

Seoul, South Korea

Mar 2025 – Present

M.S. in Electrical and Electronic Engineering

Yonsei University

Advisor: Dong-Hyun Kim

Seoul, South Korea

Mar 2023 – Feb 2025

B.S. in Biotechnology

Yonsei University

Seoul, South Korea

Mar 2021 – Feb 2023

B.S. in Biomedical Engineering

Yonsei University

Wonju, South Korea

Mar 2019 – Feb 2023

Publications (* Equal Contribution)

Conference Paper

1. Controlling Motion Transfer in Diffusion Transformers via Attention Heads

Sunyoung Jung*, Jiwoo Park*, Yoonseok Choi, Kyobin Choo, Ming-Hsuan Yang, and Seong Jae Hwang
ECCV 2026

2. QWERTY: Training-Free Motion Control via Query-Warped Video Diffusion Transformers

Kyobin Choo, Youngmin Kim, Hyunkyung Han, Geunrip Park, Chanyoung Kim, **Sunyoung Jung**, and Seong Jae Hwang
ECCV 2026

3. Query-Aligned Selective Injection for Mitigating Reference Bias in Motion Transfer

Sunyoung Jung*, Jiwoo Park*, Yeonkyung Lee, Tae Eun Choi, Woojung Han, and Seong Jae Hwang
Under Review

4. AQUA: Aligned Query Fusion for Reference-Unbiased and Temporally Consistent Video Motion Transfer

Sunyoung Jung*, Jiwoo Park*, Yeonkyung Lee, Tae Eun Choi, and Seong Jae Hwang
ICML 2026 Workshop - From Frames to Stories (F2S)

5. Anatomically Consistent TMJ Disc Segmentation via Semantic Anchoring and Clinical Priors

Dayun Ju, Chanyoung Kim, **Sunyoung Jung**, and Seong Jae Hwang
MICCAI 2026

6. Interpreting vision transformers via residual replacement model

Jinyeong Kim*, Junhyeok Kim*, Yumin Shim, Joohyeok Kim, **Sunyoung Jung**, and Seong Jae Hwang
NeurIPS 2025

7. TESLA: Test-time Reference-free Through-plane Super-resolution for Multi-contrast Brain MRI
Yoonseok Choi, **Sunyoung Jung**, Mohammed A. Al-masni, Ming-Hsuan Yang, and Dong-Hyun Kim
MICCAI 2025, Oral presentation, Top 2.2%
8. Attention-guided deep learning model focusing on myelination for predicting brain age using multi contrast MRI
Changmin Ryu, **Sunyoung Jung**, Na-Young Shin, and Dong-Hyun Kim
ISMRM 2025, Oral presentation
9. Improving subcortical segmentation in brain MRI using knowledge distillation to enhance robustness against motion artifacts
Changmin Ryu, **Sunyoung Jung**, Yoonseok Choi, and Dong-Hyun Kim
ISMRM 2025
10. SUPREM: A Super-Resolution Network for Through-Plane Structure Enhancement Using Disentangled Representation Learning in Multi-Contrast MRI
Yoonseok Choi, **Sunyoung Jung**, Mohammed A. Al-masni, Daniel Kim, and Dong-Hyun Kim
ISMRM 2025
11. Improving subcortical segmentation in brain MRI using knowledge distillation to enhance robustness against motion artifacts
Changmin Ryu, **Sunyoung Jung**, Yoonseok Choi, and Dong-Hyun Kim
ICMRI 2025, Best Trainee Scientific Awards Poster Presentation (Gold)
12. Deformation-Aware Segmentation Network Robust to Motion Artifacts for Brain Tissue Segmentation using Disentanglement Learning
Sunyoung Jung, Yoonseok Choi, Mohammed A. Al-masni, Minyoung Jung, and Dong-Hyun Kim
MICCAI 2024
13. Brain Tissue Segmentation Robust to motion artifacts using Deformation-Aware Network
Sunyoung Jung, Yoonseok Choi, Mohammed A. Al-masni, and Dong-Hyun Kim
ISMRM 2024, Oral presentation
14. Investigation of electrical conductivity changes during functional activity of the brain via phase-based MR-EPT: Preliminary observation
Kyu-Jin Jung, Chuanjiang Cui, Jae-Hun Lee, Jun-Hyeong Kim, Kyoung-Jin Park, SooHyoung Lee, **Sunyoung Jung**, Dong-Hyun Kim
ISMRM 2023, Oral presentation
15. 3D Lesion Generation Model considering Anatomic Localization to Improve Object Detection in Limited Lacune Data
Daniel Kim, Jae-Hun Lee, Mohammed A. Al-masni, Jun-ho Kim, Yoonseok Choi, Eun-Gyu Ha, **Sunyoung Jung**, Dong-Hyun Kim
ISMRM 2023

Journal Paper

1. Motion Artifact-Informed Brain Tissue Segmentation Network via Disentanglement Learning
Sunyoung Jung, Yoonseok Choi, Mohammed Al-masni, Min-Young Jung, Dong-Hyun Kim
Medical Image Analysis (MedIA), Under Review, 2025, impact factor 11.8
2. Test-time Reference-free Through-plane Super-resolution Network for Multi-contrast Brain MRI via Disentangled Representations
Yoonseok Choi, **Sunyoung Jung**, Gayoon Choi, Mohammed A. Al-masni, Kyu-Jin Jung, Wei-Ting Chen, Ming-Hsuan Yang, and Dong-Hyun Kim
Medical Image Analysis (MedIA), Under Review, 2025, impact factor 11.8
3. Unsupervised learning for motion correction and assessment in brain magnetic resonance imaging using severity-based regularized cycle consistency
Seuk Kim*, Mohammed A. Al-masni*, Seul Lee, **Sunyoung Jung**, Kyu-Jin Jung, Chuanjiang Cui, Sung-Min Gho, Young Hun Choi, and Dong-Hyun Kim
Engineering Applications of Artificial Intelligence, 2025, impact factor 8.0

Experience

Medical Imaging Artificial Intelligence Lab (MILab) - Intern

Yonsei University (Advisor: Dong-Hyun Kim)

Seoul, South Korea

Aug 2022 – Feb 2023

Human Brain Function Laboratory - Intern

Seoul National University (Advisor: Chun Kee Chung)

Seoul, South Korea

Jun 2021 – Sep 2021

Awards and Honors

1. Merit based scholarship Science and Engineering Doctor, Korea, 2026
2. Seoul Future Foundation Scholarship, Korea, 2026
3. ICMRI 2025 Best Trainee Scientific Awards Poster Presentation, Gold, Korea, 2025
4. ISMRM 2024 stipend, Korean Society of Magnetic Resonance in Medicine, Korea, 2024
5. Academic Achievement Award, Yonsei University, Korea, 2019

Academic Activities

Conference Reviewer

The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

2026

The European Conference on Computer Vision (ECCV)

2026

Neural Information Processing Systems (NeurIPS)

2026