




Sunjae Yoon

Postdoctoral Researcher, KAIST

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Research Interests

Computer Vision, Generative AI, Diffusion, Video Editing/Generation, Video Retrieval/Dialogue, 3D Reconstruction/Editing, Gaussian-Splatting, LLM, LVLM, Multimodal AI, Causal Inference, Debiasing, Dialogue.

Education

KAIST, Daejeon, South Korea

Ph.D. in Electrical Engineering (Outstanding Ph.D. Dissertation Award)

Feb. 2021 – Feb. 2025

Advisor: Chang D. Yoo

KAIST, Daejeon, South Korea

M.S. in Electrical Engineering

Sep. 2019 – Feb. 2021

Advisor: Chang D. Yoo

DGIST, Daegu, South Korea

B.S. in Computer Science (Cum Laude)

Feb. 2015 – Feb. 2019

Johns Hopkins University, MD, USA

Visiting Student, Summer Session

Jun. 2016 – Jul. 2016

Research Experience

KAIST, Daejeon, South Korea

Postdoctoral Researcher

Mar. 2025 – Feb. 2026

- 3D Generative AI: Gaussian Splatting, Text-to-3D Generation/Editing, Image-to-3D Generation

KAIST, Daejeon, South Korea

Graduate Student Researcher

Feb. 2019 – Feb. 2025

- Generative AI: Diffusion, Text-to-Image/Video Generation and Editing, Image-to-Video
- Multimodal AI: Text-to-Video Retrieval, Video-grounded Dialogue, Debiasing, LVLM

ETRI, Daejeon, South Korea

Research Intern

Jan. 2018 – Feb. 2018

- 3D Reconstruction: Mobile 3D Scene Reconstruction

DGIST, Daegu, South Korea

Research Intern

Jul. 2015 – Aug. 2015; Dec. 2016 – Jan. 2017

- 3D Vision: Camera Calibration for Augmented Reality

Selected Publications (Recent 3 years), Total: 28 publ.(15 first), citation: 360+, [Link]

- [1] S. Yoon, et al. [Novel View Editing Adaptor for Unseen View Consistent 3D Editing](#). (Under review, ICLR)
- [2] S. Yoon, G. Koo, Y. Lee, and C. D. Yoo. [Occlusion-robust Stylization for Drawing-based 3D Animation](#). International Conference on Computer Vision (ICCV), 2025. [paper] [demo] [code] **Review score: 6,6,5(avg. 5.67/6)**
- [3] G. Koo, S. Yoon, et al. [FlowDrag: 3D-aware Drag-based Image Editing with Mesh-guided Deformation Vector Flow Fields](#). International Conference on Machine Learning (ICML), 2025. [paper] [demo] [code] **Spotlight(<2.6%)**
- [4] S. Yoon, G. Koo, G. Kim, and C. D. Yoo. [TPC: Test-time Procrustes Calibration for Human Image Animation](#). Advances in Neural Information Processing Systems (NeurIPS), 2024. [paper] [demo] [code]
- [5] S. Yoon, G. Koo, J. W. Hong, and C. D. Yoo. [Dilutional Noise Initialization for Diffusion Video Editing](#). European Conference on Computer Vision (ECCV), 2024. [paper] [demo] [code] **KAIA Best Paper Award**
- [6] G. Koo, S. Yoon, J. W. Hong, and C. D. Yoo. [FlexiEdit: Frequency-Aware Latent Refinement for Enhanced Non-Rigid Editing](#). European Conference on Computer Vision (ECCV), 2024. [paper] [demo] [code]
- [7] S. Yoon, G. Koo, G. Kim, and C. D. Yoo. [FRAG: Frequency Adaptive Group for Diffusion Video Editing](#). International Conference on Machine Learning (ICML), 2024. [paper] [demo] [code]
- [8] S. Yoon, et al. [HEAR: Hearing Enhanced Audio Response for Viode-grounded Dialogue](#). Findings of the Association for Computational Linguistics (EMNLP), 2023. [paper] [code] **Samsung Humantech Paper Award**
- [9] S. Yoon, G. Koo, D. Kim, and C. D. Yoo. [Scene Complexity Aware Network for Weakly-supervised Video Moment Retrieval](#). International Conference on Computer Vision (ICCV), 2023. [paper] [code]
- [10] S. Yoon, E. Yoon, H. S. Yoon, J. Kim, and C. D. Yoo. [Information-Theoretic Text Hallucination Reduction for Video-grounded Dialogue](#). Empirical Methods in Natural Language Processing (EMNLP), 2022. [paper] [code]
- [11] S. Yoon, J. W. Hong, E. Yoon, D. Kim, et al. [Selective Query-guided Debiasing for Video Corpus Moment Retrieval](#). European Conference on Computer Vision (ECCV), 2022. [paper] [code] (Patent: US 1,232,384)

Honors & Awards

ICCV 2025 Doctoral Consortium, Ph.D. thesis selected for presentation, 2025 (Travel Grants)
Outstanding Ph.D. Dissertation Award, KAIST, 2025 (Golden Medal)
Encouragement Prize, **30th Samsung HumanTech Paper Award**, 2024 (\$1,500)
1st Prize, 2nd Seoul National University Bundang Hospital Datathon, 2024 (\$2,000)
Best Paper Award, Winter Conference of Korean AI Association, 2023 (\$1,500)
Certificate of Commendation for Cum Laude Graduation, DGIST, 2019
Certificate of Commendation from Dalseong-gun Office, Daegu, 2019
Bronze Prize, International Creative Car Competition (Autonomous Driving), 2018
Excellence Prize, Autonomous Vehicle Creation Technology Competition, 2018

Languages and Skills

Languages: English (professional working proficiency), Korean (native)
Programming and Tools: Python, C/C++, Matlab, CUDA, Docker, Git, Linux, Hugging Face
Experienced Library: PyTorch, Transformers, Diffusers, Blender, nerfstudio, OpenCV, Open3D

Project Experiences

Independent Work (KAIST): Diffusion Video Editing and Generation (ICML'24, ECCV'24, NeurIPS'24, ICCV'25)
Collaborative Work (UIUC): Natural Language Processing (EMNLP'22)
Collaborative Work (Chung-Ang Univ.): Video Retrieval and LLM (ECCV'22, EMNLP'22, EMNLP'23, EMNLP'25)
Industrial Work (Samsung Research): Video Moment Retrieval (ICASSP'23 Oral)
Industrial Work (Hanhwa System): Target Detection SAR image (Journal of IEIE'24)

Open-source Software

TPC: Image-to-Video System (Released 2025, **50+ stars**) [code]
FRAG: Video Editing System (Released 2024, **70+ stars**) [code]
HEAR: Video Dialogue System (Released 2023, **50+ stars**) [code]
SQuiDNet: Video Retrieval System (Released 2022, **70+ stars**) [code]

Academic Activities

Area Chair: ACL ARR(2025-)
Reviewer Conf.: NeurIPS (2023-), CVPR (2022-), ICCV (2023-), ECCV (2022-), ICML (2024-), ICLR (2024-), ACL (2023-), EMNLP (2022-), AAAI (2025-), ICASSP (2023-), WACV (2023-), AISTATS (2025-).
Reviewer Journals: IEEE Transactions on Big Data, IEEE TCSVT, International Journal of Human-Computer Interaction, ACM TOMM, Expert Systems With Applications, IEEE Access.

Patent

METHOD AND DEVICE FOR WAVELET-GUIDED ACCELERATION OF TEXT INVERSION IN DIFFUSION-BASED IMAGE EDITING No. KR 10-2837290 (2025-07-17)
METHOD AND DEVICE FOR VIDEO MOMENT RETRIEVAL BASED ON SELECTIVE DEBIASING No. US 1,232,384 (2025-06-03), No. KR 10-2022-0154621 (2022-11-17)
WEAKLY-SUPERVISED MOMENT RETRIEVAL NETWORK FOR VIDEO CORPUS MOMENT RETRIEVAL No. KR 10-2021-0172582 (2021-12-06)
Artificial Intelligence-based Radar Target Detection System No. KR 10-2557458 (2023-07-14)

Invited Talks & Professional Activities

[**Chung-Ang Univ.**] Multimodal Learning: Towards Robust and Flexible Diffusion-based Video Editing, Sep. 2025
[**KAIST EE**] Alumni Association, Distinguished Graduate Panel Discussion, Feb. 2025
[**IITP**] Panelist, Consultation on AI Education and Talent Retention, Innovation Academy, Seoul, Feb. 2025
[**Chung-Ang Univ.**] AI Core Technology Seminar: Empirical Methods for Video Moment Retrieval, May. 2023

References

Chang D. Yoo, Professor, KAIST (cd_yoo@kaist.ac.kr)
Junyeong Kim, Assistant Professor, Chung-Ang University (junyeongkim@cau.ac.kr)