

Jeonghyeok Do

Video and Image Computing Lab, KAIST

Google Scholar

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jeonghyeok-do



RESEARCH EXPERIENCE

- 03.2026 – Present **Principal Investigator**, Sejong Science Fellowship
Project: AI-based Satellite Image Visualization and Analysis
Funded by National Research Foundation of Korea (NRF) and MSIT
- 09.2025 – Present **Postdoctoral Researcher**, KAIST
Information & Electronics Research Institute
- 03.2019 – 08.2025 **Research Assistant**, KAIST
Various government- and industry-funded projects
Agency for Defense Development, LG Electronics, SK Hynix, Stellarvision

EDUCATION

- 03.2021 – 08.2025 **Ph.D. in Electrical Engineering**, KAIST
Advisor: Prof. Munchurl Kim (VIClab)
Thesis: *A Study on Efficient Skeletal-Temporal Transformer for Skeleton-based Action Recognition*
GPA 4.21/4.30 — 40 credits completed (include M.S.)
- 03.2019 – 02.2021 **M.S. in Electrical Engineering**, KAIST
Advisor: Prof. Munchurl Kim (VIClab)
Thesis: *Effective Labeling on Unlabeled Data for Imbalanced Training Dataset*
GPA 4.20/4.30 — 51 credits completed
- 03.2015 – 02.2019 **B.S. in Electrical Engineering**, KAIST
Double Major: Mathematical Sciences
GPA 3.80/4.30 — 151 credits completed, *Cum Laude*

RESEARCH PUBLICATIONS

International Conferences

1. **J. Do** and M. Kim, “GeoCore-9B: Towards Geo-Aware Generative Foundation Models in Earth Observation,” in *Advances in Neural Information Processing Systems (NeurIPS)*, Dec. 2026.
2. **J. Do**, Y. Chen, G. Youk, and M. Kim, “Less is More: Compact-Token Masked Feature Prediction for Skeleton Representation Learning,” in *Advances in Neural Information Processing Systems (NeurIPS)*, Dec. 2026.
3. G. Youk, **J. Do**, D. Kim, J. Oh[†], and M. Kim[†], “AVSR-Diff: Scale-Agnostic Diffusion Priors for Temporally Consistent Arbitrary-Scale Video Super-Resolution,” in *European Conference on Computer Vision (ECCV)*, [†]Co-corresponding authors, Sep. 2026.
4. **J. Do** and M. Kim, “Bridging the Skeleton-Text Modality Gap: Diffusion-Powered Modality Alignment for Zero-shot Skeleton-based Action Recognition,” in *International Conference on Computer Vision (ICCV)*, Oct. 2025.
5. **J. Do**, S. Kim, G. Youk, J. Lee[†], and M. Kim[†], “PAN-Crafter: Learning Modality-Consistent Alignment for PAN-Sharpener,” in *International Conference on Computer Vision (ICCV)*, [†]Co-corresponding authors, Oct. 2025.
6. S. Kim, **J. Do**, J. Lee[†], and M. Kim[†], “U-Know-DiffPAN: An Uncertainty-aware Knowledge Distillation Diffusion Framework with Details Enhancement for PAN-Sharpener,” in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, [†]Co-corresponding authors, Jun. 2025.
7. **J. Do** and M. Kim, “SkateFormer: Skeletal-Temporal Transformer for Human Action Recognition,” in *European Conference on Computer Vision (ECCV)*, Oct. 2024.
8. **J. Do** and M. Kim, “MorphVAD: Efficient Video Anomaly Detection Using Morphological Transformation,” in *International Conference on Visual Communications and Image Processing (VCIP)*, IEEE, Dec. 2023.
9. **J. Do** and M. Kim, “Multi-modal Transformer for Indoor Human Action Recognition,” in *2022 22nd International Conference on Control, Automation and Systems (ICCAS)*, IEEE, Nov. 2022, pp. 1155–1160.
10. C. O. Ancuti, C. Ancuti, F.-A. Vasluianu, and R. Timofte [and 48 others, including **J. Do**], “NTIRE 2020 Challenge on Non-Homogeneous Dehazing,” in *Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, Jun. 2020.

International Journals

11. **J. Do**, J. Lee, S. Lee, and M. Kim, “C-DiffSET: Leveraging Latent Diffusion for SAR-to-EO Image Translation with Confidence-Guided Reliable Object Generation,” *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)*, Jun. 2026.

12. S. Kim, **J. Do**, and M. Kim, “Pseudo-Supervised Learning for Semantic Multi-Style Transfer,” *IEEE Access*, vol. 9, pp. 7930–7942, Jan. 2021.
13. S. Ki, **J. Do**, and M. Kim, “Learning-based JND-directed HDR Video Preprocessing for Perceptually Lossless Compression with HEVC,” *IEEE Access*, vol. 8, pp. 228 605–228 618, Dec. 2020.

Preprints

14. **J. Do**, and M. Kim, “GeoCR: Learning a Generalist Cloud Removal Prior from Heterogeneous Observations,” in *arXiv preprint*, Sep. 2026.
15. **J. Do**, and M. Kim, “GeoSET: Generalist Foundation Model for SAR-to-EO Image Translation,” in *arXiv preprint*, Sep. 2026.
16. **J. Do**, S. Lee, and M. Kim, “ReFlowSET: Representation-Aligned Latent Flow Matching for SAR-to-EO Image Translation,” in *arXiv preprint*, Sep. 2026.
17. **J. Do**, Y. Chen, and M. Kim, “One for All: Generalist Foundation Model for Cross-Sensor Skeleton Representation Learning,” in *arXiv preprint*, Sep. 2026.
18. Y. Chen, M. Kim[†], and **J. Do**[†], “MotionMaestro: Masked Tokenization for Unified Motion Generation,” in *arXiv preprint*,[†]Co-corresponding authors, Sep. 2026.

Under Review

19. **J. Do** and M. Kim, “SAREO-FM: Decoupled Semantic Supervision for SAR–EO Foundation Models,” in *Under review*, 2026.
20. Y. Chen^{*}, **J. Do**^{*}, and M. Kim, “What Makes a Good Motion Tokenizer for 3D Human Motion Generation?” In *Under review*,^{*}Equal contribution, 2026.

Domestic Conferences

21. **J. Do**, S. Lee, and M. Kim, “SAR-to-Optical Domain Translation and Utilization Strategies,” in *Korea Institute of Broadcast and Media Engineers (KIBME) Workshops*, Jun. 2026.
22. Y. Chen, **J. Do**, and M. Kim, “Skeleton Aware Augmentation for Skeleton Representation Learning,” in *Korea Institute of Broadcast and Media Engineers (KIBME) Workshops*, Jun. 2026.
23. **J. Do** and M. Kim, “Beyond Fixed Partitions: Learning Dynamic Joint Grouping for Skeleton-based Action Recognition,” in *Korea Institute of Broadcast and Media Engineers (KIBME) Workshops*, Dec. 2025.
24. **J. Do** and M. Kim, “Priors on Bone Length Consistency for Skeleton-based Action Recognition,” in *Korea Institute of Broadcast and Media Engineers (KIBME) Workshops*, Jun. 2023.
25. **J. Do** and M. Kim, “Efficient Video Anomaly Detection with Future Frame Prediction,” in *Korea Institute of Military Science and Technology (KIMST) Workshops*, Nov. 2021.
26. **J. Do**, H. Sim, G. Lee, S. Baek, and M. Kim, “Efficient Video Anomaly Detection via Future Frame Prediction and Dual Memory Network,” in *Korea Institute of Industrial Engineers (KIIE) Workshops*, Nov. 2021.
27. **J. Do** and M. Kim, “Adaptive Attention based U-Net for Image Dehazing,” in *Korea Institute of Military Science and Technology (KIMST) Workshops*, Nov. 2020.
28. **J. Do** and M. Kim, “Wafer Map Defect Pattern Classification with Progressive Pseudo-Labeling Balancer,” in *Korea Institute of Broadcast and Media Engineers (KIBME) Workshops*, Nov. 2020.

PEER REVIEW EXPERIENCE

2027	Reviewer — AAAI
2026	Reviewer — BMVC, NeurIPS, AAAI, IJCV, TMM
2025	Reviewer — ICCV, CVPR, TIP, TNNLS
2024	Reviewer — VCIP
2023	Reviewer — VCIP

RESEARCH PROJECT EXPERIENCE

Government-Funded Projects

03.2026 – Present	AI-based Satellite Image Visualization and Analysis (Principal Investigator) Sejong Science Fellowship — NRF and MSIT
02.2026 – Present	Remote Sensing Foundation Models & Vision-Language Models (Project Lead) Advanced GPU Utilization Support Project — MSIT and NIPA
04.2025 – Present	AI-based Computer Vision Study for Satellite Image Processing and Analysis (Project Lead) Ministry of Science and ICT (MSIT)
01.2020 – 12.2022	MX-24: Soldier/Unit Action Recognition based on Multi-modal Learning (Project Lead) Agency for Defense Development (ADD) — CARAI

Industry-Funded Projects

11.2023 – 12.2024	AI-based SAR-to-EO Image Translation (Project Lead) Stellarvision
01.2021 – 10.2021	Video Anomaly Detection based on Image Sequence Prediction (Project Lead) SK Hynix
01.2020 – 11.2020	Defect Auto Define with Edge BMW Classification (Project Lead) SK Hynix
09.2019 – 01.2020	Low-complexity Deep Learning based Super-Resolution (Support) LG Electronics

PATENTS

01.2026	Method and Apparatus for Human Action Recognition US Patent Application No. 19/504,068
12.2025	Method and Apparatus for Human Action Recognition PCT Application No. PCT/KR2025/020742
12.2025	Uncertainty Map-based Image Processing Method and Apparatus Korean Patent Application No. 10-2025-0188253
12.2024	Image Restoration Method and Apparatus using Uncertainty-aware Knowledge Distillation and Frequency Component Enhancement Korean Patent Application No. 10-2024-0186497
12.2024	Skeleton-based Action Recognition Method and Apparatus Korean Patent Application No. 10-2024-0186489
12.2024	Method and Apparatus for Image Translation Korean Patent Application No. 10-2024-0186157

TECHNOLOGY TRANSFER

04.2025	Generative AI-based SAR-to-EO Image Translation Technology Transferred to Stellarvision
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INVITED TALKS

02.2026	Deep Learning-based Multi-modal Satellite Image Fusion Invited lecture at Prof. Jungho Im's Lab, UNIST
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HONORS & AWARDS

03.2021 – 08.2025	Government Scholarship for Ph.D. Students
03.2019 – 02.2021	KAIST Scholarship for M.S. Students
03.2015 – 02.2019	National Scholarship for Undergraduate Students
02.2015	KAIST President Award
09.2014	Hanseong Nobel Scholarship Student

TEACHING EXPERIENCE

Fall 2023	Teaching Assistant — EE534 Pattern Recognition
Spring 2023	Teaching Assistant — EE548 Matrix Computations for Signal Processing
Fall 2022	Teaching Assistant — EE432 Digital Signal Processing; EE534 Pattern Recognition
Spring 2022	Teaching Assistant — EE432 Digital Signal Processing; EE202 Signals and Systems
Fall 2021	Teaching Assistant — EE405 Electronics Design Lab.; EE202 Signals and Systems
Spring 2021	Teaching Assistant — EE432 Digital Signal Processing

SKILLS

Languages	Korean (Native), English (Conversational)
Coding	Python, PyTorch, MATLAB, WtX (all Proficient)