

EDUCATION	University of Maryland, College Park Ph.D., Computer Science Advisor: <i>Prof. Furong Huang</i>	Aug. 2026 – Present College Park, MD
	Daegu Gyeongbuk Institute of Science and Technology B.S., Computer Science Advisor: <i>Prof. Kyong Hwan Jin</i>	Feb. 2019 – Feb. 2023 Daegu, South Korea
PUBLICATIONS	Conference Papers	
	[1] Sunghwan Kim*, Byeonghyun Pak*, Kehan Long, Yulun Tian, and Nikolay Atanasov. “SERF: Spatiotemporal Environment and Robot Feature Map for Long-Horizon Mobile Manipulation”. In <i>Conference on Robot Learning (CoRL)</i>, 2026. [paper] [2] Yunghee Lee, Byeonghyun Pak, Junwha Hong, and Hoseong Kim. “Tortoise and Hare Guidance: Accelerating Diffusion Model Inference with Multirate Integration”. In <i>Advances in Neural Information Processing Systems (NeurIPS)</i>, 2025. [paper] [3] Byeonghyun Pak*, Byeongju Woo*, Sunghwan Kim*, Dae-hwan Kim, and Hoseong Kim. “Textual Query-Driven Mask Transformer for Domain Generalized Segmentation”. In <i>European Conference on Computer Vision (ECCV)</i>, 2024. [paper] [4] Byeonghyun Pak*, Jaewon Lee*, and Kyong Hwan Jin. “B-spline Texture Coefficients Estimator for Screen Content Image Super-Resolution”. In <i>IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)</i>, 2023. Highlight Paper. [paper]	
	Workshop Papers & Preprints	
	[5] Sunghwan Kim*, Byeonghyun Pak*, Kehan Long, Yulun Tian, and Nikolay Atanasov. “4D Latent Mapping for Mobile Manipulation Policy Learning”. In <i>IEEE ICRA 2026 Workshop on Multi-Modal Spatial AI</i>, 2026. Best Paper Award. [paper] [6] Yunghee Lee and Byeonghyun Pak. “Rethinking FID Through the Geometry of the Reference Dataset”. In <i>ICML 2026 Workshop on Combining Theory and Benchmarks</i>, 2026. [paper] [7] Seokmin Lee, Yunghee Lee, Byeonghyun Pak, and Byeongju Woo. “Pixel-level Scene Understanding in One Token: Visual States Need What-is-Where Composition”. In <i>CVPR 2026 Workshop on Pixel-level Video Understanding in the Wild</i>, 2026. [paper] [8] Byeongju Woo, Zilin Wang, Byeonghyun Pak, Sangwoo Mo, and Stella X. Yu. “Aligning Forest and Trees in Images & Long Captions for Visually Grounded Understanding”. <i>Under review</i>, 2026. [paper]	
RESEARCH EXPERIENCE	University of Maryland Graduate Research Assistant Advisor: <i>Prof. Furong Huang</i>	Aug. 2026 – Present College Park, MD
	• Developing self-improving agents for long-horizon mobile manipulation and embodied lifelong learning. Investigating agentic frameworks that accumulate world and skill knowledge, orchestrate reusable skills, and recover from failures across tasks and environments.	
	Independent Research Research Collaboration with UC San Diego Advisor: <i>Prof. Nikolay Atanasov</i>	Jun. 2025 – Jun. 2026 Daejeon, South Korea
	• Conducted research on robot learning for long-horizon mobile manipulation. Developed methods combining vision-language-action models with 4D latent mapping to maintain persistent spatiotemporal context for policy learning. The resulting work was published at CoRL 2026 and received the Best Paper Award at an ICRA 2026 Workshop.	

	Agency for Defense Development Research Officer for National Defense Advisor: <i>Dr. Hoseong Kim</i>	Jun. 2023 – May 2026 <i>Daejeon, South Korea</i>
	Conducted research on robust visual learning and perception for autonomous systems. Led research on vision-language models for domain-generalized semantic segmentation, studied efficient diffusion models for synthetic data generation, and developed real-time perception systems for unmanned aerial vehicles.	
	Image Processing Lab, DGIST Undergraduate Research Intern Advisor: <i>Prof. Kyong Hwan Jin</i>	Dec. 2021 – Feb. 2023 <i>Daegu, South Korea</i>
	Conducted research on deep learning for image and signal processing, with a focus on implicit neural representations. Developed a B-spline-based neural representation for screen-content image super-resolution, resulting in a CVPR 2023 Highlight paper.	
HONORS & AWARDS	University of Maryland Dean's Fellowship	2026
	Awarded to outstanding incoming Ph.D. students	
	Best Paper Award, ICRA Workshop on Multi-Modal Spatial AI	2026
	Awarded for outstanding research presented at the workshop	
	Korea National Scholarship of Excellence in Science and Technology	2021 – 2023
	National full-tuition scholarship for outstanding undergraduate students	
	Korea National Scholarship for Undergraduate Study	2019 – 2023
	National full-tuition scholarship with living stipend	
	Korea Military Academy Superintendent's Award	2021
	Awarded for a research project on object-tracking models for defense systems	
ACADEMIC SERVICES	Journal Reviewer	
	IEEE Transactions on Medical Imaging (TMI)	2025
	Conference Reviewer	
	Conference on Neural Information Processing Systems (NeurIPS)	2025, 2026
	Conference on Computer Vision and Pattern Recognition (CVPR)	2026
	Conference on Robot Learning (CoRL)	2026
	Conference on Artificial Intelligence (AAAI)	2026
	Asian Conference on Computer Vision (ACCV)	2026
	Workshop Reviewer	
	ICRA Workshop on Semantics for Reliable Robot Autonomy	2026
	IROS Workshop on AI Meets Autonomy	2026
SKILLS	Programming Languages: Python, C/C++, JavaScript, MATLAB	
	Frameworks & Tools: PyTorch, TensorFlow, Docker, Git, OpenCV, OpenGL, Open3D	
	Languages: Korean (native), English (fluent)	