

HEUIJEE (HEEJEE) YUN

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EDUCATION	Ph.D. candidate in Electrical and Electronic engineering Kyungpook National University, Daegu, South Korea <ul style="list-style-type: none">Advisor: Prof. Daejin ParkResearch area: Event-based low-power AI edge learning for AV	Mar 2022 - Feb 2028
	BSc. in Electronic engineering Kyungpook National University, Daegu, South Korea	Mar 2018 - Feb 2022

PUBLICATIONS	S3A-NPU: A High-Performance Hardware Accelerator for Spiking Self-Supervised Learning with Dynamic Adaptive Memory Optimization. <ul style="list-style-type: none">H.Yun, D. Park.IEEE Transactions on Very Large Scale Integration Systems (TVLSI),2025.	
	High-Speed Energy-Efficient Model based Dynamic Pruning using Pattern-based Alignment for Convolutional Spiking Neural Network Hardware Accelerators. <ul style="list-style-type: none">H.Yun, D. Park.IEMEK Journal of Embedded Systems and Applications,2024.	
	Low-Power Lane Detection Unit based on Sliding-based Parallel Segment Detection Accelerator for Lightweighted Automotive Microcontrollers <ul style="list-style-type: none">H.Yun, D. Park.ACCESS, 2024.	
	Efficient Object Detection based on Masking Semantic Segmentation Region for Lightweight Embedded Processors. <ul style="list-style-type: none">H.Yun, D. Park.SENSORS, 2022.	
	Efficient Object Recognition by Masking Semantic Pixel Difference Region of Vision Snapshot for Lightweight Embedded Systems. <ul style="list-style-type: none">H.Yun, D. Park.Journal of the Korea Institute of Information and Communication Engineering,2022.	
	Virtualization of Self-Driving Algorithms by Interoperating Embedded Controllers on Game Engine for Digital Twining Autonomous Vehicle. <ul style="list-style-type: none">H.Yun, D. Park.Electronics, 2021	

CONFERENCES	Opti-SpiSSL: A Highly Reconfigurable Hardware Generation Framework for Spiking Self-Supervised Learning on Heterogeneous <ul style="list-style-type: none">H.Yun, D. Park.DAC (WiP)2025	
	A Power-Efficient Reconfigurable Hybrid CNN-SNN Accelerator for High Performance AI Applications <ul style="list-style-type: none">H.Yun, D. Park.COOLCHIPS 2024	
	Deep Learning based Human Detection using Thermal-RGB Data Fusion for Safe Automotive Guided-Driving. <ul style="list-style-type: none">H.Yun, D. Park.PerVehicle 2024	
	Parallel Processing of 3D Object Recognition by Fusion of 2D Images and LiDAR for Autonomous Driving <ul style="list-style-type: none">H.Yun, D. Park.ICEIC 2024	

CONFERENCES (cont.)	Dynamic MAC Unit Pruning Techniques in Runtime RTL Simulation for Area-Accuracy Efficient Implementation of Neural Network Accelerator. <ul style="list-style-type: none"> • J.Kwon, H.Yun, D. Park. • MWSCAS 2023
	Low-Power Parallel Lane Detection Unit for Lightweight Automotive Processors <ul style="list-style-type: none"> • H.Yun, D. Park. • IEEE COOLChips 2023
	FPGA Realization of Lane Detection Unit using Sliding-based Parallel Segment Detection for Buffer Memory Reduction. <ul style="list-style-type: none"> • H.Yun, D. Park. • IEEE ICCE 2023
	Mitigating Overflow of Object Detection Tasks Based on Masking Semantic Difference Region of Vision Snapshot for High Efficiency <ul style="list-style-type: none"> • H.Yun, D. Park. • 2022 IEEE International Conference on Artificial Intelligence in Information and Communication (ICAIIIC) 2023
	Yolo-based Realtime Object Detection using Interleaved Redirection of Time-Multiplexed Streamline of Vision Snapshot for Lightweight Embedded Processors. <ul style="list-style-type: none"> • H.Yun, D. Park. • 2021 International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS)
	Simulation of Self-driving System by implementing Digital Twin with GTA5 <ul style="list-style-type: none"> • H.Yun, D. Park. • ICEIC 2021

PROJECTS	Stream-Aware Adaptive Compiler and Resilient Processor Architecture for Reliable Execution of Multimodal AI Models <ul style="list-style-type: none"> • 2025.9 -
	Development of Resilient Ultra-Long-Term Hazard Prediction Autonomous Driving-based on Human Cognition using Digital Radar Feedback <ul style="list-style-type: none"> • 2025.3 -
	Self Supervised Learnable Flexible AI-Edge Processors <ul style="list-style-type: none"> • 2023.4 -
	Sparsity aware transformer accelerator(28nm CMOS) <ul style="list-style-type: none"> • 2025.03 - 2025.07
	Reconfigurable CNN Accelerator for Adaptive AI Workloads (HAB-1, 28nm) <ul style="list-style-type: none"> • 2024.03 - 2024.08
	Custom ISA Compatible with Arm Cortex-M0+ <ul style="list-style-type: none"> • 2023.4 - 2024.01
	SNN-based Compute-In-Memory (CIM) architecture <ul style="list-style-type: none"> • 2023.8 - 2023.11

AWARDS & HONORS	Excellent Ph.D Student Research Scholarship <ul style="list-style-type: none"> • 2025.09 - 2026.08
	KNU Ph.D Fellow Scholarship Award <ul style="list-style-type: none"> • 2024

SKILLS	Languages Korean, English, Japanese
	Programming Python, C/C++, Matlab, Verilog HDL, VHDL, Latex