

Hyounghun Kim

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EDUCATION

Carnegie Mellon University	Pittsburgh, USA
<i>PhD in Electrical and Computer Engineering</i>	May. 2024 - Expected 2029
Sungkyunkwan University	Seoul, Korea
<i>Master of Science in Electrical and Computer Engineering</i>	Aug. 2022
Sungkyunkwan University	Seoul, Korea
<i>Bachelor of Science in Electronic and Electrical Engineering</i>	Feb. 2020

RESEARCH INTERESTS

Processing-in-Sensor (PIS), Deep Learning, VLSI, Sensor System, Energy Efficient Mixed Circuits

RESEARCH EXPERIENCE

Carnegie Mellon University	Pittsburgh, USA
Energy-Efficient Circuits and Systems Lab (Advisor: Prof. Vanessa Chen)	Mar. 2024 -
Project: Processing-in-Sensor Multimodal Machine Learning	
● Accepted to present at VLSI Symposium 2025 (VLSI25)	
Sungkyunkwan University	Seoul, Korea
Energy Efficient Mixed-signal Lab (Advisor: Prof. Jaehyuk Choi)	Mar. 2020 – Aug. 2022
1. Project: LiDAR SoC Full Chip Design for Automotive Car	
● Showcased a live demonstration of a 128-meter long-range LiDAR chip at SEDEX in Oct. 2022	
2. Project: LiDAR Differential Interference Filter	
● Presented at <i>IEEE International Conference on Electronics, Information, and Communication</i>	

PUBLICATIONS

H. Kim, J. Kim, E. Chen, and V. Chen, "A Multispectral Vision Sensor with Embedded Convolutional Neural Network using Programmable Fractional Weights and nMOS-Only PWM Pixels," in *IEEE Symposium on VLSI Circuits*, Kyoto, Japan, June 2025.

Hyunghun Kim and Jaehyuk Choi. "Time-to-Digital Converter With 52 ps Resolution and Interference Filter for CMOS LiDAR Sensors." *IEEE International Conference on Electronics, Information, and Communication*, Korea, Aug. 2021.

WORK EXPERIENCE

Samsung Electronics, Korea	Aug. 2022 – May. 2024
<i>Circuit Design Engineer, DRAM Design Team, Memory Business</i>	
● Designed DC-chain (BGR, TCSR, LDO) for High Bandwidth Memory (HBM3E , HBM4)	
Satrec-I, Korea	Jan – Mar. 2020
<i>Intern, Digital Circuit Design Engineer, Space-A Team</i>	

KEY SKILLS

- Cadence, Virtuoso, Spectre, Finesim/Primesim, HSPICE, DC compiler, IC compiler, Linux
- Software Language – Python, MATLAB, C, Verilog, VHDL