

Ho Seok Kim

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RESEARCH INTERESTS

Computer Architecture, Memory Systems, AI Accelerators, HW & SW Co-optimization for AI

EDUCATION

- | | |
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| Korea University
<i>M.S. in Computer Science and Engineering</i> <ul style="list-style-type: none">Advised by Professor Sung Woo ChungGPA: 4.44 / 4.5 | Mar. 2023 – Feb. 2025 (Expected)
Seoul, Korea |
| Korea University
<i>B.S. in Computer Science and Engineering</i> <ul style="list-style-type: none">Graduated with HonorsGPA: 3.91 / 4.5 (Major GPA: 4.08 / 4.5)Two-year break for military service (Apr. 2019 - Nov. 2020) | Mar. 2017 – Feb. 2023
Seoul, Korea |

RESEARCH EXPERIENCE

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| Research Assistant
<i>SoC & Microprocessor Research Lab. (Advisor: Professor Sung Woo Chung)</i> <ul style="list-style-type: none">Exploiting the data pattern found during undergraduate research, designed an error correction code (ECC) for energy-efficient and accurate DNN inference on HBM. (<i>paper based on work accepted for ISLPED 2024</i>)Conducted power and thermal simulations of a real-world processing-in-memory (PIM) device (GDDR6-AiM) when running various DNN inference applications using Gem5-Aladdin, DRAMsim3, and HotSpot 7.0.Gave poster presentation on "Sparrow ECC: A Lightweight ECC Approach for HBM Refresh Reduction towards Energy-efficient DNN Inference" at DAC 2024 Young Fellows Program. | Mar. 2023 – Current
Seoul, Korea |
| Undergraduate Researcher
<i>SoC & Microprocessor Research Lab. (Advisor: Professor Sung Woo Chung)</i> <ul style="list-style-type: none">Conducted research on finding data patterns in DNN weights of various numerical formats across various models. | Sept. 2022 – Feb. 2023
Seoul, Korea |
| Undergraduate Researcher
<i>Operating Systems Lab. (Advisor: Professor Chuck Yoo)</i> <ul style="list-style-type: none">Designed an accurate weighted multi-path routing algorithm for datacenter network switches, especially for virtual network switches such as Open vSwitch, published or submitted papers based on work.Gave poster presentation on "Predicton of Multi-Path Weights for Accurate Traffic Distribution of Datacenter Switches" at KCC 2022.Gave virtual presentation on "Analysis of Multipath Routing Techniques for Datacenter Switches" at KSC 2021. | Jun. 2021 – Aug. 2022
Seoul, Korea |

PUBLICATIONS

- Hoseok Kim**, Seung Hun Choi, Young-ho Gong, Joonho Kong, and Sung Woo Chung, "**Sparrow ECC: A Lightweight ECC Approach for HBM Refresh Reduction towards Energy-efficient DNN Inference**", *ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED)*, 2024.
- Yeonho Yoo, Gyeongsik Yang, Jeunghwan Lee, Changyong Shin, **Hoseok Kim**, and Chuck Yoo, "**TeaVisor: Network Hypervisor for Bandwidth Isolation in SDN-NV**", *IEEE Transactions on Cloud Computing (TCC)*, 2022.
- (Domestic) **Hoseok Kim**, Yeonho Yoo, Gyeongsik Yang, and Chuck Yoo, "**Predicton of Multi-Path Weights for Accurate Traffic Distribution of Datacenter Switches**", *Korea Computer Congress (KCC)*, 2022.
- (Domestic) **Hoseok Kim**, Yeonho Yoo, Gyeongsik Yang, and Chuck Yoo, "**Analysis of Multipath Routing Techniques for Datacenter Switches**", *Korea Software Congress (KSC)*, 2021.

HONORS AND AWARDS

<i>Young Fellow</i> , Design Automation Conference	Jun. 2024
<i>Semester High Honors</i> , Korea University	Spring 2021, Fall 2021, Spring 2022, Fall 2022
<i>Participation Award</i> , Korea Computer Congress	Jul. 2022
<i>Participation Award</i> , Korea Software Congress	Dec. 2021

TEACHING EXPERIENCE

Teaching Assistant	Fall 2023
<i>Logic Design (Instructor: Professor Sung Woo Chung)</i>	<i>COSE221</i>
<ul style="list-style-type: none">• Undergraduate level course, 80+ students• Gave six 1.25 hour lectures on basics of Verilog HDL and logic synthesis using an Altera DE2 FPGA board.• Designed several Verilog HDL coding assignments.	

PROFESSIONAL SERVICE

Reviewer	ACM/IEEE International Conference on Computer-Aided Design (ICCAD) 2024
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LANGUAGE PROFICIENCY

IBT TOEFL	109 (Reading: 30, Listening: 30, Speaking: 22, Writing: 27)
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REFERENCES

Sung Woo Chung

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Korea University

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Gyeongsik Yang

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