

# Ho Seok Kim

<https://hskim1324.github.io> | thomas1324@korea.ac.kr

## RESEARCH INTERESTS

---

Computer Architecture, Memory Systems, Low Power Computing Techniques, Network Systems

## EDUCATION

---

**Korea University** Mar. 2023 – Feb. 2025 (Expected)  
*M.S. in Computer Science and Engineering* Seoul, Korea

- Advised by Professor Sung Woo Chung
- GPA: 4.44 / 4.5

**Korea University** Mar. 2017 – Feb. 2023  
*B.S. in Computer Science and Engineering* Seoul, Korea

- Graduated with Honors
- GPA: 3.91 / 4.5 (Major GPA: 4.08 / 4.5)
- Two-year break for military service (Apr. 2019 - Nov. 2020)

## 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. (**Best Paper Award**)

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.

## RESEARCH EXPERIENCE

---

**Research Assistant** Mar. 2023 – Current  
*SoC & Microprocessor Research Lab. (Advisor: Professor Sung Woo Chung)* Seoul, Korea

- Designed an error correction code (ECC) for energy-efficient and accurate DNN inference on HBM, leveraging data patterns found during undergraduate research. (**paper based on work accepted for ISLPED 2024**)
- 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 oral presentation on “Sparrow ECC: A Lightweight ECC Approach for HBM Refresh Reduction towards Energy-efficient DNN Inference” at ISLPED 2024, **best paper award** among 167 submissions.
- 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.

**Undergraduate Researcher** Sept. 2022 – Feb. 2023  
*SoC & Microprocessor Research Lab. (Advisor: Professor Sung Woo Chung)* Seoul, Korea

- Conducted research on finding data patterns in DNN weights of various numerical formats across various models.

**Undergraduate Researcher** Jun. 2021 – Aug. 2022  
*Operating Systems Lab. (Advisor: Professor Chuck Yoo)* Seoul, Korea

- Designed an accurate weighted multi-path routing algorithm for datacenter network switches, especially for virtual network switches such as Open vSwitch, published and 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.

## HONORS AND AWARDS

---

<i>Best Paper Award</i> , ACM/IEEE International Symposium on Low Power Electronics and Design	Aug. 2024
<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

---

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

## TECHNICAL SKILLS

---

**Advanced:** C, C++, Python, Shell  
**Moderate:** Verilog, ARM Assembly, Linux  
**Novice:** Java

## PROFESSIONAL SERVICE

---

<b>Reviewer</b>	ACM/IEEE International Conference on Computer-Aided Design (ICCAD) 2024
-----------------	---

## LANGUAGE PROFICIENCY

---

<b>IBT TOEFL</b>	109 (Reading: 30, Listening: 30, Speaking: 22, Writing: 27)
------------------	---

## REFERENCES

---

### **Sung Woo Chung**

Professor  
Department of Computer Science and Engineering  
College of Informatics  
Korea University

Email: [swchung@korea.ac.kr](mailto:swchung@korea.ac.kr)  
<http://smr1.korea.ac.kr>

### **Gyeongsik Yang**

Assistant Professor  
Department of Computer Science and Engineering  
College of Informatics  
Korea University

Email: [g\\_yang@korea.ac.kr](mailto:g_yang@korea.ac.kr)  
<https://ss.korea.ac.kr>