

CHAE YOUNG SIM

📍 Seoul ✉️ simcy1024@korea.ac.kr ☎️ +82-10-8728-9314

RESEARCH INTERESTS

Computer Architecture, Dynamic Thermal Management, Thermal Modeling

EDUCATION

Korea University

Mar 2025 – Feb 2030 (Expected)

Ph.D. in Computer Science and Engineering

Seoul, Korea

- Advised by Professor Sung Woo Chung
- GPA: 4.43 / 4.5
- Coursework: Computer Architecture and Systems, High-Performance Computing Systems, Semiconductor Materials and Devices, etc.

Korea University

Mar 2021 – Feb 2025

B.S. in Computer Science and Engineering

Seoul, Korea

- GPA: 4.04 / 4.5
- Coursework: Computer Architecture and Systems, Operating Systems, Computer Network, Machine Learning, Deep Learning, etc.

PUBLICATIONS

Jae Yoon Lee*, **Chae Young Sim***, Seung Hun Choi, and Sung Woo Chung, “**Thermal Challenges and Opportunities for Off-the-shelf 3D-stacked CPUs**,” *IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED)*, 2025. *These authors contributed equally to this work.

(Domestic) **Chae Young Sim**, Jae Yoon Lee, and Sung Woo Chung, “**Performance Comparison of Heterogeneous Cores in Mobile APs under Thermal Constraints**,” *Korea Computer Congress (KCC)*, 2025.

Jihyun Kim, Chaeyeon Lee, Jisoo Song, **Chae Young Sim**, and Seongbin Park, “**Teaching an Elective Course about Quantum Computing**,” *International Conference on Informatics in Schools: Situation, Evolution, and Perspectives (ISSEP)*, 2023.

EXPERIENCE

Research Assistant

Mar 2025 – Current

SoC & Microprocessor Research Lab. (Advisor: Prof. Sung Woo Chung)

Seoul, Korea

- Conducted experiments on Samsung Exynos 2600 development board (Thetis) to build a temperature-aware performance and power prediction tool. (Supported by Samsung Electronics’ System LSI)
- Designed a dynamic thermal and power management technique for heterogeneous core systems (e.g., CPU, GPU, and NPU), exploiting instruction complexity in software-defined robotics (SDR) workloads. (Supported by IITP)
- Developed OS-level thermal-aware task scheduling techniques for high-performance CPUs, leveraging floorplan and adaptive voltage scaling (AVS). (Supported by IITP)
- Conducted experiments on Samsung Exynos 2600 development board (Thetis) to build a temperature-aware performance and power prediction tool. (Supported by Samsung Electronics’ System LSI)

Undergraduate Researcher

Sep 2024 – Feb 2025

SoC & Microprocessor Research Lab. (Advisor: Prof. Sung Woo Chung)

Seoul, Korea

- Analyzed performance differences between big core and middle core in mobile APs under thermal constraints, highlighting the need for thermal-aware SoC design especially in big core. (Supported by IITP)

Undergraduate Researcher

Machine Learning & Vision Lab. (Advisor: Prof. Hyunwoo J. Kim)

Jul 2023 – Jan 2024

Seoul, Korea

- Studied artificial general intelligence (AGI), generative models, diffusion.

AI Software Developer

Doctorstech, under NICE

Jan 2023 – Feb 2023

Seoul, Korea

- Developed a beauty trend identifying service using Python.
- Helped develop a game device, an acoustically responsive vest.

Undergraduate Researcher

Algorithm Lab. (Advisor: Prof. Seongbin Park)

Jul 2021 – May 2023

- Studied theory of computation, quantum computing algorithms.
- Inspected the upcoming book, *Algorithm And Hyperlinks*.

PATENTS

(Domestic) Sung Woo Chung, Jae Yoon Lee, and **Chae Young Sim**, “**Method and apparatus for heterogeneous-core migration**,” *Korea Application Number: 10-2026-0015657*, 2026.

PROFESSIONAL EXPERIENCE

Reviewer

IEEE/ACM International Conference on Computer-Aided Design (ICCAD)

2025 - 2026

Teaching Assistant

Computer Architecture (Instructor: Prof. Sung Woo Chung)

Fall 2025

COSE222

- Undergraduate course (50+ students).
- Delivered six 1.25 hour lectures covering Verilog HDL fundamentals, logic synthesis, and functional/timing simulation using an Altera DE2 FPGA board.
- Designed Verilog HDL programming assignments, including combinational/sequential circuits, a RISC-V single-cycle processor, and RISC-V pipeline processor.

AWARDS AND HONORS

Best Teamwork

Google Datacenter Hardware Hackathon

Aug 2024

Seoul, Korea

SKILLS AND TECHNIQUES

Programming

Python, PyTorch, C, C++, OCaml, PHP, ARM Assembly, RISC-V Assembly

Languages

Native Korean, Conversational English

REFERENCES

Sung Woo Chung

Professor

Department of Computer Science and Engineering

College of Informatics

Korea University

Email: swchung@korea.ac.kr

<http://smrl.korea.ac.kr>