Jinpyo Kim

University of California, San Diego | jik066@ucsd.edu | 619-357-5244 | https://jinpyo-cs.github.io/

Education

University of California, San Diego San Diego, CA, US
Ph.D. Candidate in Computer Science, 2023 ~ Present
Advisor: Professor Jishen Zhao

Sogang University Seoul, Korea
Master of Science in Computer Science and Engineering, 2016
Advisor: Professor Juho Kim

Sogang University Seoul, Korea
Bachelor of Engineering in Computer Science and Engineering, 2014

Research Interest

1. Optimization of Memory Access Patterns in Large Language Models (LLM)
2. Data Placement for Performance Maximization in Memory Systems

Research Experience

Graduate Research Assistant, STABLE Lab UC San Diego
Our group explores a broad range of computer architecture and system topics that bridge system software and hardware design.

Graduate Research Assistant, CAD & VLSI Research Lab Sogang University
Master's Thesis : Efficient Flash Cache Management in Online Transaction Processing Server
Project: Process variation and BTI-aware Static Timing Analysis for Samsung, 2014 – 2015.

Work Experience

Embedded Software Engineer SK Hynix, Korea
- Develop Power Loss Protection for Datacenter SSD PE9000 series (2020 ~ 2023)
- Optimize FTL address mapping for Datacenter SSD SE5000 series (2017 ~ 2020)
- Conduct research on real workloads of SSD, SSD performance estimation, QoS simulation, and competitor's SSD benchmarking (2016 ~ 2017)

Computer Technician Republic of Korea Navy, Korea
- maintained a variety of Linux OS servers such as Solaris and Red Hat at Naval Headquarters (2008 – 2010)

Patents

U.S. 10,741,254: "Memory system and operating method thereof.", 2020
U.S. 10,860,227: "Memory controller, memory system having the same, and method of operating the same.", 2020
U.S. 11,269,528: "Data storage device, operation method thereof and controller therefor.", 2022
U.S. 11,307,942: "Memory system, memory controller and method for operating memory controller.", 2022
U.S. 11,404,137: "Memory system and operating method of memory system", 2022
U.S. 11,422,747: "Memory system and method for operating memory controller included therein.", 2022
U.S. 11,556,252: "Storage device and method of operating the same.", 2023
U.S. 11,593,006: "Data storage apparatus and method for managing valid data based on bitmap table.", 2023
U.S. 11,599,275: "Memory controller for controlling power loss recovery and method of operating the same.", 2023
U.S. 11,704,050: "Memory system for determining a memory area in which a journal is stored according to a number of free memory blocks.", 2023

Honors & Awards

SK Hynix Ph.D. Fellowship Program in 2021
SK Hynix Industrial Scholarship in 2012

Technical Skills

Programming Languages: C/C++, Python, Java, UNIX shell
Platform: Windows XP/7/8/10, Linux, UNIX server
Debugger: TRACE32 (hardware debugger for embedded systems such as ARM architecture)

References

Prof. Jishen Zhao (advisor)
Associate Professor at University of California
Email: jzhao@ucsd.edu
Phone: 858-822-2449

Prof. Juho Kim
Professor at Sogang University, Director of CAD & VLSI Lab, Rich Hall 906A, Sogang University, Seoul, Korea.
Email: jhkim@sogang.ac.kr
Phone: +82-2-706-3997

Dr. Dongyoung Seo (co-worker)
Principal Engineer at SK Hynix Inc., Project Leader of Client SSD team, 13 floor, SK-U tower, Seongnam, Korea.
Email: dongyoung.seo@sk.com
Phone: +82-10-8590-6536