Hojoon Kim

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(+82) 10-7475-0565 hojoonkim.02@gmail.com linkedin.com/in/kim-hojoon github.com/kim-hojoon

Education

KAIST **Daejeon, Republic of Korea**
B.S. in Computer Science and Electrical Engineering *Mar. 2021 – Current*
- **GPA**: 4.14/4.30

EPFL **Lausanne, Switzerland**
Exchange Student in Computer Science *Feb. 2024 – Jul.2024*
- **Coursework:** Advanced Compiler Construction, Intro to Machine Learning, Computer Vision, Undergrad Research

Research Interest

My research interests lie at the intersection of system architecture and complex challenges. I am passionate about applying core principles of computer systems to optimize high-level problems in areas like computer vision.

Research Experience

Parallel Systems Architecture Lab (PARSA) **Lausanne, Switzerland**
Visiting Researcher; *Advisor: Babak Falsafi* *Mar. 2024 – Jun. 2024*
- Contributed to the Midgard project, a novel virtual memory design that divides address translation into two parts.
- Proposed a lazy invalidation technique for translations in the Midgard virtual memory system, reducing unnecessary cache flushes and enhancing memory management efficiency.
- Designed experiments using the Linux kernel to evaluate the effectiveness of the proposed method.

Computer Architecture and Systems Lab (CASYS) **Daejeon, Republic of Korea**
Undergraduate Researcher; *Advisor: Jongse Park* *Jun. 2023 – Jan. 2024*
- Contributed to a Video Understanding project.
- Analyzed the performance of the method based on the computational ratios.
- Conducted comprehensive literature reviews, summarizing relevant research papers for the project.

Industry Experience

RTST **Daejeon, Republic of Korea**
RTOS Researcher *Oct. 2024 – Current*
- Contributed to developing **RTWORKS**, the Real-Time Operating System for reliable and trustworthy systems
- Designed and implemented kernel functionalities and device drivers, including software timers and the SATA driver
- Ported RTWORKS to various board support packages (BSPs)

Projects

L3 Project (CS-420 Advanced Compiler Construction) at EPFL | *Scala, C, Compiler & Virtual Machine Concepts*
- L3 (**L**isp-**l**ike **L**angauge) is a special funtional language designed for CS-420 course.
- Developed the backend interpreters for the L3 Compiler using Scala.
- Implemented components of the L3 Virtual Machine using C.

Technical Skills

Technologies / Environments: PyTorch, Git, Docker
Concepts: Operating System, Embedded System, Microarchitecture, Compiler, Machine Learning, Computer Vision

Teaching/Mentoring

Teaching Assistant: KAIST CS101 Introduction to Programming *Sep. 2023 – Dec. 2023*
Mentor: KAIST CS101 Introduction to Programming *Sep. 2023 – Dec. 2023*

Services

Team Leader: of Director at KAIST Broadcasting System
Association Member: at KAIST Freshman Student Council & KAIST School of Computing Student Council