

RESEARCH INTERESTS

- **Computer Architecture:** Multi-GPU systems, GPU memory safety and GPU-SSD architecture co-design.

EDUCATION

Georgia Institute of Technology Ph.D. in Computer Science Advisor: Hyesoon Kim	Atlanta, GA, USA Jan. 2024 – Present
Korea Advanced Institute of Science and Technology (KAIST) B.S. Major in Electrical Engineering, Minor in Mathematical Sciences GPA: 4.05/4.30 (<i>Summa Cum Laude</i>)	Daejeon, Korea Feb. 2018 – Feb. 2024
Georgia Institute of Technology Student Exchange Program in Electrical and Computer Engineering GPA: 4.0/4.0	Atlanta, GA, USA Jan. 2023 – Aug. 2023

RESEARCH EXPERIENCE

Georgia Tech HPArch Lab Graduate Research Assistant (Advisor: Hyesoon Kim)	Atlanta, GA, USA Jan. 2023 – Present
Macsim Projects (Cycle-level GPGPU simulator):	
– [link] Added SASS trace support for Macsim by leveraging NVBit and CUDA APIs.	
– [link] Integrated Macsim with MQSim to evaluate a GPU-SSD co-design architecture designs, such as adaptive GPU block scheduling and address mapping policies.	
– [link] Proposed Allegro: Statistical approach for sampling to accelerate GPU simulations on ML workloads.	
– Evaluated performance overhead of BNPL: a novel fine-grained hardware bounds-checking solution for GPUs, demonstrating under 1% performance overhead in CUDA and ML benchmarks.	
Vortex 2.0: Participated in designing and evaluating the next generation of Vortex: an open-source hardware and software project to support GPGPU based on RISC-V.	
KAIST INALab Undergraduate Research Assistant (Advisor: Dongsu Han)	Daejeon, Korea Jul. 2021 – Aug. 2022
Scene-clustered SR Training: Developed and evaluated SR-Net, a content-aware video delivery algorithm using video scene clustering, achieving a +5.8dB PSNR gain over prior methods with the same resources.	
4K support for LiveNAS: Adapted LiveNAS system [link] for 4K videos by utilizing ONNX and TensorRT, achieved 3x speedup in end-to-end 4K video processing.	

PUBLICATIONS

- [1] **Euijun Chung**, Seonjin Na, and Hyesoon Kim, “Allegro: GPU simulation acceleration for machine learning workloads”, in *Machine Learning for Computer Architecture and Systems 2024 (workshop co-located with ISCA 2024)*, 2024.
- [2] Myoung Jae Lee and **Euijun Chung**, “Experimental Analysis on the 0 Dimensional Plasma Model in an Inductively Coupled Plasma (ICP)”, in *2016 New Physics: Sae Mulli*, Aug. 2016, 66:1183–1189.

TEACHING

- **Teaching Assistant for CS8803 - GPU Hardware & Software** Summer 2024
Designed GPGPU simulator for programming assignments
- **Tutor in Freshman Tutoring Program** Fall 2021, Spring 2022, Fall 2022, Fall 2023
MAS 102 Calculus II (Vector Calculus)
Tutored Calculus II to freshmen through weekly lectures and office hours, fostering their understanding of the course.

SKILLS

- **Programming:** C/C++, CUDA, Python, LLVM, C#, Java
- **Architecture Simulators and HDL:** SystemVerilog, MQSim, Macsim, Verilator (RTL Simulation)
- **Machine Learning & Data Science:** cuDNN, cuBLAS, Pytorch, Tensorflow, Pandas
- **Tools:** NVBit, MATLAB, ARM Mbed, Unity, GameMaker Studio, LabWindows/CVI, L^AT_EX
- **Languages:** English (Proficient), Korean (Native), Japanese (Proficient)

SCHOLARSHIPS AND HONORS

- **ISCA 2023 uArch Workshop Full Grant Recipient** Jun. 2023
Accepted as a full travel grant recipient for the 5th Undergrad Architecture Mentoring Workshop at ISCA 2023.
- **KOSAF (Korea Student Aid Foundation) National Science & Technology Scholarship** 2022 – 2024
Awarded scholarship for being an outstanding undergraduate student in engineering.
- **Dean's List for KAIST EE** Fall 2022
Awarded academic honor to students who have achieved exceptional academic performance (top 3%).

EXTRACURRICULAR ACTIVITIES & EXPERIENCES

- **Nongnet Agricultural Commodity Price Prediction AI Competition** Seoul, Korea
Achieved a top 13% ranking out of 69 participating teams. Fall 2022
 - Participated in an AI competition for price prediction utilizing a comprehensive 10-year agricultural transaction database. Developed a Transformer model for accurate agricultural product price forecasting using Pytorch, Pandas, and other data analysis tools.
- **Republic of Korea Air Force (ROKAF)** Gwangju, Korea
Air Base Systems Operator Aug. 2019 – May 2021
 - *Compulsory military service.* Served as a 24/7 TACAN (TACTical Air Navigation) Operator at an Air Base, responsible for the continuous operation, monitoring, and troubleshooting of the crucial radar-like machine used by fighter aircraft to navigate and locate airports.