MINWOO (JOSH) KANG

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EDUCATION

University of California, Berkeley

PhD in Electrical Engineering and Computer Science (EECS)

Aug 2020 – Present Berkeley, CA

- Advisor: Prof. John Wawrzynek (ARC)
- Affiliation: Berkeley Wireless Research Center (BWRC)

Williams College

BA in Computer Science and Physics

Sep 2014 – Jun 2020 Williamstown, MA

- Overall GPA: 3.98 | CS GPA: 4.00
- Magna Cum Laude; Phi Beta Kappa (top 5% of class); Sigma Xi
- Highest Honors in Computer Science
- Sam Goldberg Colloquium Prize in CS, Class of '60 Scholar

RESEARCH EXPERIENCE

Berkeley Architecture Research (UCB-BAR)

Graduate Student Researcher

Jun 2020 – Berkeley, CA

- Assisted with development, simulation runs and performance verification for project on constraint-solver-based framework to schedule DNN workloads on spatial architectures.
- Advised by Prof. John Wawrzynek and Prof. Sophia Shao (UC Berkeley); project led by Qijing (Jenny) Huang
- Manuscript submitted to ASPLOS 2021

Williams College Archiecture Group

Research Assistant | Thesis Student

Jun 2019 – Jun 2020 Williamstown, MA

- Developed a RISC-V SoC on FPGAs that can dynamically customize its collection of on-chip accelerators.
- Implemented several Rocket Coprocessor (RoCC) accelerators
- Recieved Highest Honors in Computer Science

Williams College Materials Physics Lab

Research Assistant

Jan 2018 – Jun 2020 Williasmtown, MA

- Research on solvent phase separation phenomenon in soft silicone gels under adhesive contacts
- Developed image processing code in MATLAB to directly measure fluid separation volume from confocal microscopy images
- PDMS gel synthesis; CAD-designed and built a microscope-compatible bi-axial stretcher
- Presented posters at 2018 Soft Days at UMass Amherst and 2018 Williams Summer Science Research

OTHER EXPERIENCE

UNCSB-Joint Security Area

Command Support Squad Leader | Sergeant

Sep 2015 – Jun 2017 Panmunjom, Korea

- Military service with the Republic of Korea Army at UNCSB-JSA, a ROK-US combined unit securing the inter-governmental conference area on the Korean border
- Led command support squad and participated in high-level visitor escort operations, KOR-ENG translations and field recon patrols as a radiotelephone operator

CLASS/IND PROJECTS

Bloom or Bust

- CUDA and RISC-V hardware accelerator implementation of Bloom filter operations
- Demonstrated up to 10× speedups

WAVE

- WAVE is an emulator for ARM-like assembly written in x86_64
- Ranked 1st in class code optimization contest

TEACHING

@Williams College

algorithm design and analysis
computer organization
vibrations, waves and optics
electricity and magnetism
foundations of modern physics

SELECTED COURSEWORK

introduction to digital design & IC
introduction to machine learning
parallel processing
distributed systems
programming languages
graph theory
condensed matter physics
applications of quantum mechanics

SKILLS

Programming Languages
C/C++, CUDA, Java, x86 & RISC-V assembly

Hardware Development
Verilog, Chisel HDL, Vivado (FPGA flow), Cadence (ASIC flow)