Minwoo (Josh) Kang

577 Soda Hall, Berkeley CA, 94720

✉ mkang@eecs.berkeley.edu | joshuaminwookang.github.io

Education

University of California, Berkeley   *Berkeley, CA*

PH.D. IN ELECTRICAL ENGINEERING AND COMPUTER SCIENCE   *Aug. 2020 - Present*

- Advisor: Prof. John Wawrzynek
- Area: Computer Architecture

Williams College   *Williamstown, MA*

B.A. IN COMPUTER SCIENCE AND PHYSICS   *Sep. 2014 - Jun. 2020*

- GPA: 3.98 / Major GPA: 4.00
- Highest Honors in Computer Science
- Sam Goldberg Prize in Computer Science
- Phi Beta Kappa and Sigma Xi

Publications

LFPS: Learned Formal Proof Strengthening for Efficient Hardware Verification   *International Conference on Computer-Aided Design (ICCAD)*

KANG, M., NOVA, A., SINGH, E., BATHINI, G.S., VIKTOROV, Y.   *October 2023*

CoSA: Scheduling by Constrained Optimization for Spatial Accelerators   *International Symposium on Computer Architecture (ISCA)*

HUANG, Q., KANG, M., DINH, G., NORELL, T., KALAIAH, A., DEMMEL, J., WAWRZYNEK, J., AND SHAO, Y.S.   *June 2021*

Experience

Google   *Sunnyvale, CA*

STUDENT RESEARCHER / HW ENGINEERING INTERN   *May 2022 - May 2023*

- Research project at the Google Cloud CI2 team.

Berkeley Wireless Research Center and SLICE Lab   *Berkeley, CA*

GRADUATE STUDENT RESEARCHER   *August 2020 -*

- Neural Architecture Search for Co-Optimization of Transformers
    - Collaboration with Prof. Kurt Keutzer Group at Berkeley AI Research
- End-to-End QoR Predictive Model for Efficient Logic Synthesis Optimization
- SiFuzz: a Bottom-Up Random Circuit Generator Based on Canonical Hardware Design Patterns
- Robot Rigid Body Dynamics Acceleration on Gemmini Systolic Array

Undergraduate Research, Computer Architecture (PI: Prof. Duane Bailey)   *Williamstown, MA*

RESEARCH ASSISTANT | THESIS STUDENT   *June 2019 - June 2020*

- Developed a RISC-V SoC on FPGAs that can dynamically customize its collection of on-chip accelerators
- Implemented Rocket Coprocessor (RoCC) accelerators integrated into Linux-lowRISC SoC

Undergraduate Research, Materials Physics (PI: Prof. Katharine Jensen)   *Williamstown, MA*

RESEARCH ASSISTANT   *Jan. 2018 - June 2020*

- 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

Coursework

Architecture / VLSI   Graduate Computer Architecture; Introduction to Digital Design and IC; Hardware for ML
Machine Learning   Deep Reinforcement Learning and Control; Statistical Learning Theory; Introduction to ML; ML Systems