YAKUN SOPHIA SHAO

Assistant Professor
SK Hynix Faculty Fellow
EECS, UC Berkeley
Cory 570, Berkeley CA, 94720
Email: ysshao@berkeley.edu
Website: https://people.eecs.berkeley.edu/~ysshao/
Google Scholar

RESEARCH INTERESTS

Domain-Specific Architecture, Machine Learning Systems, Design Methodology, Hardware Prototyping

EDUCATION

2009-2016	**Harvard University**, Cambridge, MA Ph.D. in Computer Science.
2009-2014	**Harvard University**, Cambridge, MA Master of Science in Computer Science.
2005-2009	**Zhejiang University**, Hangzhou, Zhejiang, China Bachelor of Electrical Engineering

PROFESSIONAL EXPERIENCE

2019-Present	**Assistant Professor** University of California, Berkeley, Berkeley, CA
2018-2019	**Senior Research Scientist** NVIDIA Research, Santa Clara, CA
2016-2018	**Research Scientist** NVIDIA Research, Santa Clara, CA
2009-2016	**Research Assistant** Harvard University, Cambridge, MA
Summer 2015	**Research Intern** IBM T.J. Watson Research Center, Yorktown Heights, NY
Summer 2014	**Research Intern** IBM T.J. Watson Research Center, Yorktown Heights, NY
Summer 2012	**Research Intern** Intel Labs, Santa Clara, CA

AWARDS AND HONORS

2024 Sloan Research Fellowship
2023 IEEE Micro's Top Picks in Computer Architecture
2023 ISCA Distinguished Artifact Award
2023 Google Research Scholar Award
2023 NSF CAREER Award
2022 Okawa Foundation Research Grant
2022 IEEE Senior Member
2022 Intel Rising Star Faculty Award
2022 IEEE TCCA Young Computer Architect Award
2021 Best Paper Award, Design Automation Conference (DAC)
2021 Inaugural Dr. Sudhakar Yalamanchili Award for Contribution to Modeling and Simulation
2020 Best Paper Award, IEEE Journal of Solid-State Circuits (JSSC)
2020 Google Research Recognition for Technical Leadership and Achievements in Systems Research
2020 SK Hynix Faculty Fellow
2020 Facebook Research Award
2020 Paper selected as a CACM Research Highlight (Nominated by ACM SIGMICRO)
2020 Two papers selected as IEEE Micro Top Picks in Computer Architecture Honorable Mentions
2019 Best Paper Award, International Symposium on Microarchitecture (MICRO)
2017 ACM Doctoral Dissertation Award Harvard Nominee
2015 IBM Ph.D. Fellowship
2015 Siebel Scholar
2014 IEEE Micro's Top Picks in Computer Architecture
2014 Best in Session Award, SRC TECHCON
2014 Rising Stars in EECS Workshop Invited Participant

PUBLICATIONS

2023 **AuRORA: Virtualized Accelerator Orchestration for Multi-Tenant Workloads**
Seah Kim, Jerry Zhao, Krste Asanovic, Borivoje Nikolic, Yakun Sophia Shao
International Symposium on Microarchitecture (MICRO), October 2023
☆ **Artifacts Available, Artifacts Evaluated - Functional, Results Reproduced**
☆ **Top Picks in Computer Architecture**

2023 **DOSA: Differentiable Model-Based One-Loop Search for DNN Accelerators**
Charles Hong, Qijing Huang, Grace Dinh, Mahesh Subedar, Yakun Sophia Shao
International Symposium on Microarchitecture (MICRO), October 2023
☆ **Artifacts Available, Artifacts Evaluated - Functional, Results Reproduced**

2023 **RoSÉ: A Hardware-Software Co-Simulation Infrastructure Enabling Pre-Silicon Full-Stack Robotics SoC Evaluation**
Dima Nikiforov, Shengjun Chris Dong, Chengyi Lux Zhang, Seah Kim, Borivoje Nikolic, Yakun Sophia Shao
International Symposium on Computer Architecture (ISCA), June 2023
☆ **Artifacts Available, Artifacts Evaluated - Functional, Results Reproduced**
☆ **ISCA Distinguished Artifact Award**

2023 **CDPU: Co-designing Compression and Decompression Processing Units for Hyperscale Systems**
Sagar Karandikar, Aniruddha Udipi, Junsun Choi, Joonho Whangbo, Jerry Zhao, Svilen Kanev, Edwin Lim, Jyrki Alakuijala, Vrishab Madduri, Yakun Sophia Shao, Borivoje Nikolic, Krste Asanovic, Parthasarathy Ranganathan
International Symposium on Computer Architecture (ISCA), June 2023
☆ **Artifacts Available, Artifacts Evaluated - Functional, Results Reproduced**

2023 **RETROSPECTIVE: Aladdin: A Pre-RTL, Power-Performance Accelerator Simulator Enabling Large Design Space Exploration of Customized Architectures**
Yakun Sophia Shao, Brandon Reagen, Gu-Yeon Wei, David Brooks
ISCA@50 Retrospective: 1996-2020, June 2023

2023 **MoCA: Memory-Centric, Adaptive Execution for Multi-Tenant Deep Neural Networks**
Seah Kim, Hasan Genc, Vadim Nikiforov, Krste Asanovic, Borivoje Nikolic, Yakun Sophia Shao
IEEE International Symposium on High-Performance Computer Architecture (HPCA) , March 2023
☆ **Open Research Objects, Research Objects Reviewed, Results Reproduced**

2022 **Learning A Continuous and Reconstructible Latent Space for Hardware Accelerator Design**
Qijing Huang, Charles Hong, John Wawrzynek, Mahesh Subedar, Yakun Sophia Shao
International Symposium on Performance Analysis of Systems and Software (ISPASS), May 2022

2021 **Gemmini: Enabling Systematic Deep-Learning Architecture Evaluation via Full-Stack Integration**
Hasan Genc, Seah Kim, Alon Amid, Ameer Haj-Ali, Vighnesh Iyer, Pranav Prakash, Jerry Zhao, Daniel Grubb, Harrison Liew, Howard Mao, Albert Ou, Colin Schmidt, Samuel Steffl, John Wright, Ion Stoica, Jonathan Ragen-Kelley, Krste Asanovic, Borivoje Nikolic, Yakun Sophia Shao
Design Automation Conference (DAC), December 2021
☆ **DAC Best Paper Award**

2021 **A 16mm2 106.1 GOPS/W Heterogeneous RISC-V Multi-Core Multi-Accelerator SoC in Low-Power 22nm FinFET**
Abraham Gonzalez, Jerry Zhao, Ben Korpan, Hasan Genc, Colin Schmidt, John Wright, Ayan Biswas, Alon Amid, Farhana Sheikh, Anton Sorokin, Sirisha Kale, Mani Yalamanchi, Ramya Yarlagadda, Mark Flannigan, Larry Abramowitz, Elad Alon, Yakun Sophia Shao, Krste Asanovic, and Bora Nikolic
IEEE European Solid-State Circuit Conference (ESSCIRC), September 2021

2021 **CoSA: Scheduling by Constrained Optimization for Spatial Accelerators**
Qijing Huang, Minwoo Kang, Grace Dinh, Thomas Norell, Aravind Kalaiah, James Demmel, John Wawrzynek, Yakun Sophia Shao
International Symposium on Computer Architecture (ISCA), June 2021

2021 **Simba: Scaling Deep-Learning Inference with Chiplet-Based Architecture**
Yakun Sophia Shao, Jason Clemons, Rangharajan Venkatesan, Brian Zimmer, Matthew Fojtik, Ted Jiang, Ben Keller, Alicia Klinefelter, Nathaniel Pinckney, Priyanka Raina, Stephen G Tell, Yanqing Zhang, William J. Dally, Joel S. Emer, C. Thomas Gray, Brucek Khailany, Stephen W. Keckler
Communications of the ACM (CACM), June 2021
☆ **CACM Research Highlight**

2021 **Vertically Integrated Computing Labs Using Open-Source Hardware Generators and Cloud-Hosted FPGAs**
Alon Amid, Albert Ou, Krste Asanovic, Yakun Sophia Shao, Borivoje Nikolic

IEEE International Symposium on Circuits and Systems (ISCAS), May 2021

2021 **Memory-Efficient Hardware Performance Counters with Approximate-Counting Algorithms**
Jingyi Xu, Sehoon Kim, Borivoje Nikolic, Yakun Sophia Shao
IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS), March 2021

2021 **SNAP: An Efficient Sparse Neural Acceleration Processor for Unstructured Sparse Deep Neural Network Inference**
Jie-Fang Zhang, Ching-En Lee, Chester Liu, Yakun Sophia Shao, Stephen W. Keckler, Zhengya Zhang
IEEE Journal of Solid-State Circuits (JSSC), February 2021

2020 **Chipyard: Integrated Design, Simulation, and Implementation Framework for Custom SoCs**
Alon Amid, David Biancolin, Abraham Gonzalez, Daniel Grubb, Sagar Karandikar, Harrison Liew, Albert Magyar, Howard Mao, Albert Ou, Nathan Pemberton, Paul Rigge, Colin Schmidt, John Wright, Jerry Zhao, Yakun Sophia Shao, Krste Asanovic, Borivoje Nikolic
IEEE Micro Special Issue on Agile and Open-Source Hardware, July/August 2020

2020 **NeuroVectorizer: End-to-End Vectorization with Deep Reinforcement Learning**
Ameer Haj-Ali, Nesreen K. Ahmed, Ted Willke, Yakun Sophia Shao, Krste Asanovic, Ion Stoica
International Symposium on Code Generation and Optimization (CGO), February 2020
☆ **Artifacts Available, Artifacts Evaluated - Functional, Results Reproduced**

2020 **A 0.32-128 TOPS, Scalable Multi-Chip-Module-based Deep Neural Network Inference Accelerator with Ground-Referenced Signaling in 16nm**
Brian Zimmer, Rangharajan Venkatesan, Yakun Sophia Shao, Jason Clemons, Matthew Fojtik, Nan Jiang, Ben Keller, Alicia Klinefilter, Nathaniel Pinckney, Priyanka Raina, Stephen G. Tell, Yanqing Zhang, William J. Dally, Joel S. Emer, C. Thomas Gray, Stephen W. Keckler, Brucek Khailany
IEEE Journal of Solid-State Circuits (JSSC), Jan 2020
☆ **JSSC Best Paper Award**

2019 **MAGNet: A Modular Accelerator Generator for Neural Networks**
Rangharajan Venkatesan, Yakun Sophia Shao, Miaorong Wang, Jason Clemons, Steve Dai, Matthew Fojtik, Ben Keller, Alicia Klinefilter, Nathaniel Pinckney, Yanqing Zhang, Brian Zimmer, William J. Dally, Joel S. Emer, Stephen W. Keckler, Brucek Khailany
International Conference on Computer Aided Design (ICCAD), November 2019

2019 **Simba: Scaling Deep-Learning Inference with Multi-Chip-Module-Based Architecture**
Yakun Sophia Shao, Jason Clemons, Rangharajan Venkatesan, Brian Zimmer, Matthew Fojtik, Ted Jiang, Ben Keller, Alicia Klinefelter, Nathaniel Pinckney, Priyanka Raina, Stephen G Tell, Yanqing Zhang, William J. Dally, Joel S. Emer, C. Thomas Gray, Brucek Khailany, Stephen W. Keckler
International Symposium on Microarchitecture (MICRO), October 2019
☆ **MICRO Best Paper Award**
☆ **Top Picks in Computer Architecture Honorable Mentions**
☆ **Research Highlight in Communications of the ACM (CACM)**

2019 **A 0.11pJ/Op, 0.32-128 TOPS, Scalable Multi-Chip-Module-based Deep Neural Network Accelerator with Ground-Referenced Signaling in 16nm**
Brian Zimmer, Rangharajan Venkatesan, Yakun Sophia Shao, Jason Clemons, Matthew Fojtik, Nan Jiang, Ben Keller, Alicia Klinefilter, Nathaniel Pinckney, Priyanka Raina, Stephen G. Tell, Yanqing Zhang, William J. Dally, Joel S. Emer, C. Thomas Gray, Stephen W. Keckler, Brucek Khailany
VLSI Symposium on Circuits, June 2019

2019 **SNAP: A 1.67-21.55 TOPS/W Sparse Neural Acceleration Processor for Unstructured Sparse Deep Neural Network Inference**
Jie-Fang Zhang, Ching-En Lee, Chester Liu, Yakun Sophia Shao, Stephen W. Keckler, Zhengya Zhang
VLSI Symposium on Circuits, June 2019

2019 **Buffets: An Efficient and Composable Storage Idiom for Explicit Decoupled Data Orchestration**
Michael Pellauer, Yakun Sophia Shao, Jason Clemons, Neal Crago, Kartik Hegde, Rangharajan Venkatesan, Stephen W. Keckler, Christopher W. Fletcher, Joel Emer
International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), April 2019
☆ **Top Picks in Computer Architecture Honorable Mentions**

2019 **Timeloop: A Systematic Approach to DNN Accelerator Evaluation**
Angshuman Parashar, Priyanka Raina, Yakun Sophia Shao, Yu-Hsin Chen, Victor A. Ying, Anurag Mukkara, Rangharajan Venkatesan, Brucek Khailany, Stephen W. Keckler, Joel Emer
International Symposium on Performance Analysis of Systems and Software (ISPASS), March 2019

2018 **A Modular Digital VLSI Flow for High-Productivity SoC Design**
Brucek Khailany, Matthew Fojtik, Alicia Klinefelter, Evgeni Krimer, Michael Pellauer, Nathaniel Pinckney, Haoxing Ren, Yakun Sophia Shao, Rangharajan Venkatesan, Yanqing Zhang, Brian Zimmer
Design Automation Conference (DAC), March 2018

2018 **Stitch-X: An Accelerator Architecture for Exploiting Unstructured Sparsity in DNNs**
Ching-En Lee, Yakun Sophia Shao, Jie-Fang Zhang, Angshuman Parashar, Joel Emer, Stephen W. Keckler, Zhengya Zhang
SysML Conference, February 2018

2018 **Assisting High-Level Synthesis Improve SpMV Benchmark Through Dynamic Dependence Analysis**
Rafael Garibotti, Brandon Reagen, Yakun Sophia Shao, Gu-Yeon Wei, David Brooks
IEEE Transactions on Circuits and Systems II: Express Briefs, 2018

2017 **Using Dynamic Dependence Analysis to Improve the Quality of High-Level Synthesis Designs**
Rafael Garibotti, Brandon Reagen, Yakun Sophia Shao, Gu-Yeon Wei, David Brooks
International Symposium on Circuits and Systems (ISCAS), May 2017

2016 **Co-Designing Accelerators and SoC Interfaces using gem5-Aladdin**
Yakun Sophia Shao, Sam Xi, Viji Srinivasan, Gu-Yeon Wei, David Brooks
International Symposium on Microarchitecture (MICRO), October 2016

2015 **Toward Cache-Friendly Hardware Accelerators**
Yakun Sophia Shao, Sam Xi, Viji Srinivasan, Gu-Yeon Wei, David Brooks
HPCA Sensors and Cloud Architectures Workshop (SCAW), Feb 2015

2015 **The Aladdin Approach to Accelerator Design and Modeling**
Yakun Sophia Shao, Brandon Reagen, Gu-Yeon Wei, David Brooks
IEEE Micro, May-June 2015

2014 **MachSuite: Benchmarks for Accelerator Design and Customized Architectures**
Brandon Reagen, Robert Adolf, Yakun Sophia Shao, Gu-Yeon Wei, David Brooks
International Symposium on Workload Characterization (IISWC), Oct 2014

2014 **Aladdin: A Pre-RTL, Power-Performance Accelerator Simulator Enabling Large Design Space Exploration of Customized Architectures**
Yakun Sophia Shao, Brandon Reagen, Gu-Yeon Wei, David Brooks
International Symposium on Computer Architecture (ISCA), June 2014
☆ **Top Picks in Computer Architecture**
☆ **Selected as one of the ISCA@50 Retrospective: 1996-2020 Collection**

2013 **Energy Characterization and Instruction-Level Energy Model of Intel's Xeon Phi Processor**
Yakun Sophia Shao, David Brooks
International Symposium on Low Power Electronics and Design (ISLPED), Sept 2013

2013 **Quantifying Acceleration: Power/Performance Trade-offs of Application Kernels in Hardware**
Brandon Reagen, Yakun Sophia Shao, Gu-Yeon Wei, David Brooks
International Symposium on Low Power Electronics and Design (ISLPED), Sept 2013

2013 **ISA-Independent Workload Characterization and its Implications for Specialized Architectures**
Yakun Sophia Shao, David Brooks
International Symposium on Performance Analysis of Systems and Software (ISPASS), April 2013

2010 **Power, Performance and Portability: System Design Considerations for Micro Air Vehicle Applications**
Yakun Sophia Shao, Judson Porter, Michael J. Lyons, Gu-Yeon Wei, David Brooks
Advanced Computer Architecture and Compilation for Embedded Systems (ACACES), July 2010

DISSERTATION AND BOOK

2016 **Design and Modeling of Specialized Architectures**
Yakun Sophia Shao
Ph.D. Dissertation, Harvard University, May 2016.
☆ **Nominated for ACM Doctoral Dissertation Award**

2015 **Research Infrastructures for Hardware Accelerators**
Yakun Sophia Shao, David Brooks
Synthesis Lectures on Computer Architecture, Morgan & Claypool Publishers, Nov 2015.

PATENTS

Efficient Neural Network Accelerator Dataflows
US Patent App. 16/672,918, Filed Nov 2019.
Scalable Multi-Die Deep Learning System
US Patent App. 16/517,431, Filed July 2019.
Deep Neural Network Accelerator with Fine-Grained Parallelism Discovery
US Patent App. 15/929,093, Filed Jan 2019.

Open-Source Software

Aladdin: A pre-RTL, power-performance-area simulator for fixed-function accelerators. [GitHub]
Chipyard: An integrated design, simulation, and implementation framework for custom SoCs. [GitHub]
CoSA: A constrained-optimization-based scheduler for spatial accelerators. [GitHub]
DoSA: A differentiable model-based one-loop search methodology for spatial accelerators. [GitHub]
gem5-Aladdin: An SoC simulator. [GitHub] [Users Group]
Gemmini: A systolic array generator for deep-learning architecture. [GitHub]
LLVM-Tracer: An LLVM optimization pass to print a dynamic LLVM IR trace. [GitHub]
MachSuite: A benchmark suite for accelerators. [GitHub]
MatchLib: A SystemC/C++ library of commonly-used hardware components for HLS. [GitHub]
MoCA: Adaptive memory partitioning for multi-tenant DNNs [GitHub]
ONNXRuntime-RISCV: ONNXRuntime support for RISCV-based Accelerators. [GitHub]
ReROCC: ReRoCC: Remote RoCC Extension for RoCC-enabled RISC-V Cores. [GitHub]
RoSÉ: A hardware-software co-simulation infrastructure for pre-silicon robotics SoC evaluation. [GitHub]
Timeloop: A design space exploration tool for DNN accelerators. [GitHub]
VAESA: A design space exploration framework with variational autoencoders. [GitHub]
WIICA: An ISA-independent workload characterization tool for accelerators. [GitHub]

Teaching Experience

2024 **EE290-2 Hardware for Machine Learning (Spring)**, Instructor, UC Berkeley
Enrollment: 30

2023 **CS152/252A Computer Architecture and Engineering (Spring)**, Instructor, UC Berkeley
Enrollment: 180
Instructor Evaluation: 6.1/7 (152), 6.8/7 (252A)
Course Evaluation: 5.2/7 (152), 6.6/7 (252A)

2022 **EECS151/251A Intro. to Digital Design and Integrated Circuits (Fall)**, Instructor, UC Berkeley
Enrollment: 167
Instructor Evaluation: 6.2/7 (151), 6.3/7 (251A)
Course Evaluation: 5.8/7 (151), 6.2/7 (251A)

2022 **EECS151/251A Intro. to Digital Design and Integrated Circuits (Spring)**, Instructor, UC Berkeley
Enrollment: 61
Instructor Evaluation: 6.2/7 (151), 6.5/7 (251A)
Course Evaluation: 6.1/7 (151), 6.3/7 (251A)

2021 **EE290-2 Hardware for Machine Learning (Spring)**, Instructor, UC Berkeley
Enrollment: 21
Instructor Evaluation: 6.5/7
Course Evaluation: 5.4/7

2020 **EECS151/251A Intro. to Digital Design and Integrated Circuits (Fall)**, Instructor, UC Berkeley
Enrollment: 79
Instructor Evaluation: 5.2/7 (151), 6.0/7 (251A)
Course Evaluation: 5.6/7 (151), 6.0/7 (251A)

2020 **EE290-2 Hardware for Machine Learning (Spring)**, Instructor, UC Berkeley
Enrollment: 39
Instructor Evaluation: 6.3/7
Course Evaluation: 6.0/7

2019 **EECS151/251A Intro. to Digital Design and Integrated Circuits (Fall)**, Instructor, UC Berkeley
Enrollment: 72
Instructor Evaluation: 6.2/7 (151), 5.8/7 (251A)
Course Evaluation: 6.3/7 (151), 5.8/7 (251A)

2013 **CS247r Advanced Topics in Computer Architecture**, Teaching Fellow, Harvard University

2013 **CS246 Advanced Computer Architecture**, Teaching Fellow, Harvard University

2011 **CS141 Computing Hardware**, Teaching Fellow, Harvard University

TUTORIALS AND SPECIAL CLASSES

2024 **Next-Generation Domain-Specific Accelerators: From Hardware to System,**
Yakun Sophia Shao
IEEE International Solid-State Circuits Conference (ISSCC), February 2024.

2023 **Designing, Deploying, and Evaluating Full-Stack Robotics Systems With RoSÉ,**
Yakun Sophia Shao with Dima Nikiforov, Kris Dong, Lux Zhang
International Symposium on Microarchitecture (MICRO), October 2023.

2022 **Gemmini: Enabling Systematic Deep-Learning Architecture Evaluation via Full-Stack Integration,**
Yakun Sophia Shao with Hasan Genc, Simon Guo, Dima Nikiforov, Krste Asanovic, and Bora Nikolic
Machine Learning and Systems (MLSys), September 2022.

2021 **Gemmini: Enabling Systematic Deep-Learning Architecture Evaluation via Full-Stack Integration,**
Yakun Sophia Shao with Hasan Genc, Simon Guo, Dima Nikiforov, Avi Nandakumar, Krste Asanovic, and Bora Nikolic
International Symposium on Workload Characterization (IISWC), November 2021.

2021 **Next-Generation Deep-Learning Accelerators: From Hardware to System,**
Yakun Sophia Shao
VLSI Symposia on Technology and Circuits (VLSI), June 2021.

2016 **Rapid Exploration of Accelerator-Rich Architectures: Automation from Concept to Prototyping,**
Yakun Sophia Shao with David Brooks, Jason Cong, Zhenman Fang, Gu-Yeon Wei, and Sam Xi
International Symposium on Microarchitecture (MICRO), October 2016.

2016 **Aladdin and gem5-Aladdin: Research Infrastructures for Specialized Architectures,**
Yakun Sophia Shao with David Brooks, Gu-Yeon Wei, and Sam Xi
International Symposium on Workload Characterization (IISWC), September 2016.

2015 **Rapid Exploration of Accelerator-Rich Architectures: Automation from Concept to Prototyping,**
Yakun Sophia Shao with David Brooks, Yu-Ting Chen, Jason Cong, Zhenman Fang, Brandon Reagen, Glenn Reinman, Gu-Yeon Wei, and Sam Xi
International Symposium on Computer Architecture (ISCA), June 2015.

2015 **Research Infrastructures for Accelerator-centric Architectures,**
Yakun Sophia Shao with David Brooks, Mark Hempstead, Brandon Reagen, and Gu-Yeon Wei

International Symposium on High Performance Computer Architecture (HPCA), Feb 2015.

2014 **Research Infrastructures for Accelerator-centric Architectures,**
Yakun Sophia Shao with David Brooks, Brandon Reagen, Kevin Skadron, Liang Wang, and Gu-Yeon Wei
International Symposium on Computer Architecture (ISCA), June 2014.

ADVISING

Postdoc

Vikram Jain (with Nikolic), 2023-

Ph.D. Students

Kevin Anderson (with Asanovic), 2022-
Yufeng Chi (with Nikolic), 2023-
Junsun Choi (with Nikolic), 2021-
Kris Dong, 2023-
Prashanth Ganesh, 2021-
Charles Hong, 2022-
Coleman Hooper (with Keutzer), 2022-
Roger Hsiao (with Demmel), 2021-
Hansung Kim, 2020-
Seah Kim (with Nikolic), 2019-
Vadim Nikiforov (with Nikolic), 2020-
Joonho Whangbo (with Asanovic), 2022-

Ph.D. Student Collaborators

Grace Dinh (advisor J. Demmel), 2020-
Hasan Genc (advisor K. Asanovic), 2020-
Jerry Zhao (advisor K. Asanovic), 2022-

Former Ph.D. Students and Collaborators

Alon Amid (advisor K. Asanovic and B. Nikolic), 2020-2021
- Now at Microsoft

Qijing (Jenny) Huang (advisor J. Wawrzynek), 2019-
- Now at NVIDIA

Current Masters Students

Leena Elzeiny, 2023-
Richard Yan, 2023-

Current Undergraduate Researchers

Billy Bao, 2023-
SooHyuk Cho, 2023-
Zekai Lin, 2022-
Vamber Yang, 2022-
Joshua You, 2022-
Chengyi Zhang, 2022-

Former Masters Researchers

Students	Year	Initial Positions
Kareem Ahmad	2020-2021	Apple
Chris Dong	2022-2023	Ph.D. Student, UCB
Charles Hong	2021-2022	Ph.D. Student, UCB
Avinash Nandakumar	2019-2022	Apple

Former Undergraduate Researchers

Students	Year	Initial Positions	Awards
Kareem Ahmad	2020-2021	M.S. @ UCB	
Leena Elzeiny	2021-2023	M.S. @ UCB	Apple Hardware Scholarship
Simon Guo	2021-2023	Ph.D. @ Stanford	UCB Arthur M. Hopkin Award (outstanding EE undergrad)
Divija Hasteer	2022-2023	M.S. @ Stanford	
Charles Hong	2020-2021	M.S. @ UCB	Apple Hardware Scholarship
Avinash Nandakumar	2019-2022	M.S. @ UCB	Apple Hardware Scholarship
Thomas Norell	2019-2020	Amazon	2nd Place in CGO'2020 SRC
Patrick Wang	2019-2020	NVIDIA	1st Place in PACT'2020 SRC
Jingyi Xu	2019-2020	Ph.D. @ UCB	
Richard Yan	2021-2023	M.S. @ UCB	Apple Hardware Scholarship

Ph.D. Qual Committee

2023 Aviral Pandey (advisor R. Muller)
2022 Sagar Karandikar (advisor K. Asanovic)
Arya Reais-Parsi (advisor J. Wawrzynek)
Albert Ou (advisor K. Asanovic)
2021 Tan Nguyen (advisor J. Wawrzynek)
Alisha Menon (advisor J. Rabaey)
Hasan Genc (advisor K. Asanovic)
Nathan Pemberton (advisor R. Katz)
2020 Benyuanyi Liu (advisor A. Niknejad)
Adelson Chua (advisor R. Muller)
Qijing (Jenny) Huang (advisor J. Wawrzynek)
Ameer Haj Ali (advisors I. Stoica and K. Asanovic)

Ph.D. Dissertation Committee

2023 Albert Ou (advisor K. Asanovic)
2022 Nathan Pemberton (advisor R. Katz)
2021 Qijing (Jenny) Huang (advisor J. Wawrzynek)

PROFESSIONAL SERVICE

Editing

2022 Guest Editor, IEEE Journal of Solid-State Circuits (JSSC)
2020 Guest Editor, IEEE Micro Special Issue on Commercial Products, November/December 2020
2018 Guest Editor, IEEE Micro Special Issue on Hardware Acceleration, November/December 2018

Program Committees

2024 ISSCC, VLSI, ISCA, External: ASPLOS
2023 ISSCC, ISCA, External: ASPLOS, HPCA
2022 ISSCC, MLSys, ISCA, External: ASPLOS, HPCA, MICRO
2021 ASPLOS, MLsys, ISCA, DAC, TopPicks, External: MICRO
2020 ASPLOS, MLSys, ISCA, HotChips, ISCA Industry, External: MICRO
2019 MICRO, External: HPCA, ISCA
2018 MICRO, DAC, External: HPCA
2017 ISCA

Journal Review

IEEE Journal of Solid State Circuits
IEEE Computer Architecture Letters
IEEE Micro
IEEE Transactions on Computers
ACM Transactions on Architecture and Code Optimization
GTC Poster Reviewer for AI Application Deployment/Inference
Communications of the ACM (CACM)

Grant Review

2023 One National Science Foundation (NSF) Panel
2022 One National Science Foundation (NSF) Panel
2021 One Department of Energy (DOE) Panel
2020 One Natural Sciences and Engineering Research Council of Canada (NSERC) Panel
One National Science Foundation (NSF) Panel

Organizing Committees

2022 Co-Vice Chair of Women in Computer Architecture (WICARCH)
2022 Co-Chair of the Next-Generation Circuit Designer Workshop at ISSCC
2020 Co-Organizer of the Rising Stars in EECS @ UC Berkeley

Finance Chair of ASPLOS

2019 SIGARCH Visioning Workshop on Agile and Open Hardware Design for Next-Generation Computing
Area Chair of International Conference on Artificial Intelligence Circuits and Systems (AICAS)
Tutorial Chair of ISCA

2018 Registration Chair of IISWC

2017 Web Co-Chair of Women in Computer Architecture (WICARCH)
Web Director of ACM Special Interest Group on Microarchitecture (SIGMICRO)

UC Berkeley Service

2023 Faculty Search Committee, EECS
ECE Major Committee, EECS
Student Award Committee, EECS
Space Committee, EECS

2022 Faculty Search Committee, EECS
ECE Major Committee, EECS
Graduate Student Admissions Committee, EECS

2021 Graduate Matters Committee, EECS
Graduate Student Admissions Committee, EECS

2020 Future Direction Committee, EECS
Graduate Student Admissions Committee, EECS

2019 Future Direction Committee, EECS
Graduate Student Admissions Committee, EECS