David Wentzlaff
Curriculum Vitae

Contact

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Education

Massachusetts Institute of Technology, Cambridge, MA
Ph.D., Electrical Engineering and Computer Science, February 2012.
  Thesis: *dPool: A Distributed Data Structure for Factored Operating Systems*
  Advisors: Prof. Anant Agarwal and Prof. Srinivas Devadas (co-advisor)
  Committee: Prof. M. Frans Kaashoek and Prof. Robert Morris
  Minor: Math

Massachusetts Institute of Technology, Cambridge, MA
S.M., Electrical Engineering and Computer Science, September 2002
  Thesis: *Architectural Implications of Bit-level Computation in Communication Applications*
  Adviser: Prof. Anant Agarwal

University of Illinois at Urbana-Champaign, Urbana, IL
B.S., Electrical Engineering, May 2000
  Minor: *Computer Science*

Awards and Honors

2023	ISCA Hall of Fame inductee
2019	MICRO Hall of Fame inductee
2018	ASPLOS WACI Test-of-Time Award for work on Biodegradable Computing
2015	Princeton University School of Engineering and Applied Sciences, E. Lawrence Keyes, Jr. / Emerson Electric Co. Faculty Advancement Award
2015	National Science Foundation CAREER Award
2014	DARPA Young Faculty Award (DARPA YFA)
2014	Air Force Office of Scientific Research Young Investigator Program (AFOSR YIP)
2010	Best Presentation Award: IBM Student Workshop for Frontiers of Cloud Computing
2008	ISSCC Beatrice Winner Award for Editorial Excellence for "TILE64 Processor: A 64-core SoC with Mesh Interconnect"
1999	UIUC Donald L. Bitzer and H. Gene Slottow Creativity Award
	Eta Kappa Nu Electrical Engineering Honors Society Member

Experience

1/2024–present **Princeton University Department of Electrical and Computer Engineering**
Professor
Researching post-Moore's Law computer architectures. Researching manycore computer architecture applied to future data centers and cloud computers. Researching the construction of environmentally friendly and biodegradable computers.

7/2018–1/2024 **Princeton University Department of Electrical and Computer Engineering**
Associate Professor

9/2011–6/2018 **Princeton University Department of Electrical Engineering**
Assistant Professor

10/2013–present **Princeton University Department of Computer Science**
Associated Faculty

9/2007–9/2011 **MIT Computer Science and Artificial Intelligence Laboratory**
Research Assistant
Thesis researching the design of operating systems for 1000+ core computer chips and cloud computers

12/2004–9/2007 **Tilera Corporation**
Co-founder and Lead Architect
Led the design of the TILE64 and TILE*Pro*64 processor architecture
Wrote the TILE architecture manual
Implemented the main pipeline of the TILE64
Designed interface between operating system and hardware in the TILE architecture

9/2000–1/2005 **MIT Computer Science and Artificial Intelligence Laboratory**
Research Assistant
Contributed to design and implementation of the Raw Microprocessor, a 16-core microprocessor
Implemented Raw's dynamic networks, test structures, and POPCOUNT unit
Designed and Implemented Raw's chipset; led chip bring-up
Designed parallel x86 dynamic binary translation system targeting Raw

11/1999–8/2000 **Spanuza Research**
Co-founder
Designed NUMA-style memory architecture for custom blade server
System design and logic design in Verilog

10/1999–5/2000 **University of Illinois at Urbana-Champaign**
Undergraduate Research Assistant
Multiprocessor Cache Research under Prof. Nicholas Carter

Teaching Experience

Fall '12,'13,'14, '17,'22,'23 Spring '19	**Princeton ECE 585 (Old 580A/575) – Parallel Computation** *Instructor* Parallel Computation teaches graduate students the skills needed to be successful in conducting research in parallel programming and parallel computer architecture. This course covers different parallel programming languages and parallel programming models as well as discusses in depth different parallel computer architectures and design trade-offs while creating parallel computing machines. In addition to the educational content goals, this class also introduces students to critically reading and reviewing research papers and provides students an opportunity to write a research paper with new results which is critiqued by other students. I created the curriculum for this course at Princeton University.
Spring '12,'13, '14,'15,'18,'22, '23, '24, Fall '15, '16, '18,'19	**Princeton ECE/COS 475 – Computer Architecture** *Instructor* ECE/COS 475 teaches Juniors, Seniors, and first-year graduate students how to build complex microprocessors. This class builds on a computer organization class (ECE 375) along with a digital logic class (ECE 206). Topics include the design of superscalar processors, out-of-order microprocessors, VLIW processors, Vector processors, multicore processors, memory coherence protocols, and on-chip networks. I revitalized this course at Princeton University. Since Spring 2018, in semesters when I have taught ECE 475, I have also taught ECE 575 which is a slightly modified version of the course for graduate students which shares the same lectures as ECE 475.
Spring 2020	**Princeton ECE 115 – Introduction to Computing: Programming Autonomous Vehicles** *Instructor* This course teaches first year undergraduate engineering students how to program and is taught through the use of autonomous vehicles. This course has a key lab component where students program autonomous quadcopters
Fall '13,'14,'15	**Princeton ELE 301 – Designing Real Systems** *Co-Instructor* Team-taught Princeton's Junior-Level course on system design. I have redesigned my portion of this course to include a focus on digital systems where the students learn all of the levels of abstraction (software to hardware) involved with a modern day tablet or smartphone. This is taught with the help of newly designed labs where students write Android programs for a tablet and interface the tablet with a custom hardware device.
Fall '12,'13,'15, '16, converted to continuous ('16–)	**Coursera/Princeton – Computer Architecture** *Instructor* I adapted my ELE/COS 475 course to teach it online as part of Princeton University's experiment in Massively Open Online Courses (MOOC). Over 200,000 students have enrolled in this course and it is the first full Computer Architecture class on the Internet. This course currently appears on Coursera at `https://www.coursera.org/course/comparch`
Spring 2009	**MIT 6.004 – Computation Structures** *Teaching Assistant* In this course, I taught sophomore undergraduates digital logic design and introductory computer architecture. I am very passionate about this course because a similar course in my undergraduate got me fascinated with computer architecture. I always find it amazing how combinational logic can be put together with state holding elements to produce fully functional state machines. I was a Teaching Assistant for this course under the guidance of Prof. Steve Ward. In 6.004, I taught two recitation sections which met twice a week, held laboratory hours, and graded exams.

IAP '08,'09,'10	**MIT Outing Club Winter School**
	Instructor and Lead Organizer
	MIT's Outing Club annually teaches a course during IAP (January Term) about hiking, camping, climbing, skiing, and enjoying winter in the outdoors. I taught selected lectures for three years in front of a class of 180 students. Also, during the weekends in January, as a Winter School leader, I lead trips of 8 students on hiking, camping, and climbing trips in White Mountain National Forest. In 2009, I co-organized all of the logistics of Winter School.
Spring 2002	**MIT 6.846 – Parallel Computing**
	Teaching Assistant
	6.846 teaches parallel computer architecture and how to map parallel programs onto different parallel architectures. I was an informal Teaching Assistant for this course in Spring 2002. I created and organized the final project for the course which involved using the Raw Microprocessor environment to implement a parallel implementation of acoustic beamforming. I also guest lectured selected lectures in this course on dynamic network design for multicore processors.
IAP 2001	**MIT 6.186 – Mobile Autonomous Systems Laboratory**
	Instructor
	In 2001, I was part of a small team of graduate students who ran an autonomous robotics course. In this course, students learn to build autonomous, vision-based robots. There is a competition at the end of the month where the robots compete.

Publications
Marcelo Orenes-Vera, Hyunsung Yun, Nils Wistoff, Gernot Heiser, Luca Benini, David Wentzlaff, and Margaret Martonosi. AutoCC: Automatic discovery of covert channels in time-shared hardware. In *MICRO: Proceedings of the IEEE/ACM International Symposium on Microarchitecture*, MICRO-56, Oct 2023.

Michael B. Taylor, David Wentzlaff, Saman Amarasinghe, and Anant Agarwal. RETROSPECTIVE: Evaluation of the RAW Microprocessor: An Exposed-Wire-Delay Architecture for ILP and Streams. In José F. Martínez and Lizy K. John, editors, *ISCA@50 25-Year Retrospective: 1996-2020*. ACM SIGARCH and IEEE TCCA, 2023.

August Ning, Georgios Tziantzioulis, and David Wentzlaff. Supply Chain Aware Computer Architecture. In *ISCA: Proceedings of the International Symposium on Computer Architecture*, 2023.

Girgory Chirkov and David Wentzlaff. Seizing the Bandwidth Scaling of On-Package Interconnect in a Post-Moore's Law World. In *ICS: Proceedings of the International Conference on Supercomputing*, 2023.

Ting-Jung Chang, Ang Li, Fei Gao, Tuan Ta, Georgios Tziantzioulis, Yanghui Ou, Moyang Wang, Jinzheng Tu, Kaifeng Xu, Paul J. Jackson, August Ning, Grigory Chirkov, Marcelo Orenes-Vera, Shady Agwa, Xiaoyu Yan, Eric Tang, Jonathan Balkind, Christopher Batten, and David Wentzlaff. CIFER: A 12nm, 16mm2, 22-Core SoC with a 1541 LUT6/mm2, 1.92 MOPS/LUT, Fully Synthesizable, Cache-Coherent, Embedded FPGA. In *CICC: Proceedings of the IEEE Custom Integrated Circuits Conference*, 2023.

Fei Gao, Ting-Jung Chang, Ang Li, Marcelo Orenes-Vera, Davide Giri, Paul Jackson, August Ning, Georgios Tziantzioulis, Joseph Zuckerman, Jinzheng Tu, Kaifeng Xu, Grigory Chirkov, Gabriele Tombesi, Jonathan Balkind, Margaret Martonosi, Luca Carloni, and David Wentzlaff. DECADES: A 67mm2, 1.46TOPS, 55 Giga Cache-Coherent 64-bit RISC-V Instructions per second, Heterogeneous Manycore SoC with 109 Tiles including Accelerators, Intelligent Storage, and eFPGA in 12nm FinFET. In *CICC: Proceedings of the IEEE Custom Integrated Circuits Conference*, 2023.

Grigory Chirkov and David Wentzlaff. SMAPPIC: Scalable Multi-FPGA Architecture Prototype Platform in the Cloud. In *ASPLOS: Proceedings of the ACM International Conference on Architectural Support for Programming Languages and Operating Systems*, 2023.

Ang Li, August Ning, and David Wentzlaff. Duet: Creating Harmony between Processors and Embedded FPGAs. In *HPCA: Proceedings of the IEEE Symposium on High Performance Computer Architecture*, 2023.

Marcelo Orenes Vera, Esin Tureci, David Wentzlaff, and Margaret Martonosi. Dalorex: A Data-Local Program Execution and Architecture for Memory-bound Applications. In *HPCA: Proceedings of the IEEE Symposium on High Performance Computer Architecture*, 2023.

Fei Gao, Georgios Tziantzioulis, and David Wentzlaff. FracDRAM: Fractional Values in Off-the-Shelf DRAM. In *MICRO: Proceedings of the IEEE/ACM International Symposium on Microarchitecture*, pages 885–899, 2022.

Marcelo Orenes-Vera, Aninda Manocha, Jonathan Balkind, Fei Gao, Juan L. Aragón, David Wentzlaff, and Margaret Martonosi. Tiny but Mighty: Designing and Realizing Scalable Latency Tolerance for Manycore SoCs. In *ISCA: Proceedings of the 49th Annual International Symposium on Computer Architecture*, page 817–830, 2022.

Yuchen Liu, S. Y. Kung, and David Wentzlaff. Evolving transferable neural pruning functions. In *GECCO: Proceedings of the Genetic and Evolutionary Computation Conference*, page 385–394, 2022.

Georgios Tziantzioulis, Ting-Jung Chang, Jonathan Balkind, Jinzheng Tu, Fei Gao, and David Wentzlaff. OPDB: A Scalable and Modular Design Benchmark. *TCAD: IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, 41(6):1878–1887, 2022.

Yuchen Liu, David Wentzlaff, and S. Y. Kung. Class-Discriminative CNN Compression. In *ICPR: Proceedings of the International Conference on Pattern Recognition*, pages 2070–2077, 2022.

Marcelo Orenes-Vera, Aninda Manocha, David Wentzlaff, and Margaret Martonosi. AutoSVA: Democratizing Formal Verification of RTL Module Interactions. In *DAC: Proceedings of the ACM/IEEE Design Automation Conference*, DAC '21. ACM, 2021.

Zhuozhi Yao, Ting-Jung Chang, David Wentzlaff, and Barry P. Rand. Benchmarking organic thin film transistor inverter design styles. *Synthetic Metals*, 278:116825, 2021.

Ang Li and David Wentzlaff. PRGA: An Open-Source FPGA Research and Prototyping Framework. In *FPGA: Proceedings of the ACM/SIGDA International Symposium on Field-Programmable Gate Arrays*, FPGA '21, March 2021.

Yuxuan Jiang, Mohammad Shahrad, David Wentzlaff, Danny H. K. Tsang, and Carlee Joe-Wong. Burstable Instances for Clouds: Performance Modeling, Equilibrium Analysis, and Revenue Maximization. *IEEE/ACM Transactions on Networking*, 28(6):2489–2502, 2020.

Ang Li, Ting-Jung Chang, and David Wentzlaff. Automated Design of FPGAs Facilitated by Cycle-Free Routing. In *FPL: Proceedings of the International Conference on Field-Programmable Logic and Applications*, 2020.

Jonathan Balkind, Ting-Jung Chang, Paul J. Jackson, Georgios Tziantzioulis, Ang Li, Fei Gao, Alexey Lavrov, Grigory Chirkov, Jinzheng Tu, Mohammad Shahrad, and David Wentzlaff. Open-Piton at 5: A Nexus for Open and Agile Hardware Design. *IEEE Micro*, pages 22–31, July/August 2020.

Alexey Lavrov and David Wentzlaff. HyperTRIO: Hyper-tenant Translation of I/O Addresses. In *ISCA: Proceedings of the ACM/IEEE International Symposium on Computer Architecture*, 2020.

Jonathan Balkind, Katie Lim, Fei Gao, Michael Schaffner, Grigory Chirkov, Ang Li, Alexey Lavrov, Tri Nguyen, Yaosheng Fu, Florian Zaruba, Kunal Gulati, Luca Benini, and David Wentzlaff. BYOC: A "Bring Your Own Core" Framework for Heterogeneous-ISA Research. In *ASP-LOS: Proceedings of the ACM International Conference on Architectural Support for Programming Languages and Operating Systems*, ASPLOS '20, March 2020.

Ting-Jung Chang, Zhuozhi Yao, Barry P. Rand, and David Wentzlaff. Organic-Flow: An Open-Source Organic Standard Cell Library and Process Development Kit. In *DATE: Proceedings of the Design, Automation and Test in Europe Conference*, March 2020.

Mina Tahmasbi Arashloo, Alexey Lavrov, Manya Ghobadi, Jennifer Rexford, David Walker, and David Wentzlaff. Enabling programmable transport protocols in high-speed NICs. In *NSDI: Proceedings of the USENIX Symposium on Networked Systems Design and Implementation*, February 2020.

Jonathan Balkind, Michael McKeown, Yaosheng Fu, Tri Nguyen, Yanqi Zhou, Alexey Lavrov, Mohammad Shahrad, Adi Fuchs, Samuel Payne, Xiaohua Liang, Matthew Matl, and David Wentzlaff. OpenPiton: an Open Source Hardware Platform for Your Research. *Communications of the ACM*, 62(12):79–87, 2019.

Mohammad Shahrad, Jonathan Balkind, and David Wentzlaff. Architectural Implications of Function-as-a-Service Computing. In *MICRO: Proceedings of the IEEE/ACM International Symposium on Microarchitecture*, MICRO-52, October 2019.

Fei Gao, Georgios Tziantzioulis, and David Wentzlaff. ComputeDRAM: In-Memory Compute Using Off-the-Shelf DRAMs. In *MICRO: Proceedings of the IEEE/ACM International Symposium on Microarchitecture*, MICRO-52, October 2019.

Jonathan Balkind, Michael Schaffner, Katie Lim, Florian Zaruba, Fei Gao, Jinzheng Tu, David Wentzlaff, and Luca Benini. OpenPiton+Ariane: The First Open-Source, SMP Linux-booting RISC-V System Scaling From One to Many Cores. In *CARRV: Proceedings of the Workshop on Computer Architecture Research with RISC-V*, June 2019.

Yuxuan Jiang, Mohammad Shahrad, David Wentzlaff, Danny H.K. Tsang, and Carlee Joe-Wong. Burstable Instances for Clouds: Performance Modeling, Equilibrium Analysis, and Revenue Maximization. In *INFOCOM: Proceedings of the IEEE International Conference on Computer Communications*, April 2019.

Ang Li and David Wentzlaff. PRGA: An Open-source Framework for Building and Using Custom FPGAs. In *OSDA: Proceedings of the Workshop on Open Source Design Automation*, March 2019.

Adi Fuchs and David Wentzlaff. The Accelerator Wall: Limits of Chip-Specialization. In *HPCA: Proceedings of the IEEE Symposium on High Performance Computer Architecture*, HPCA '19, February 2019.

Jonathan Balkind, Alexey Lavrov, Michael McKeown, Yaosheng Fu, Tri Nguyen, Mohammad Shahrad, Ang Li, Katie Lim, Yanqi Zhou, Ting-Jung Chang, Paul Jackson, Adi Fuchs, Samuel Payne, Xiaohua Liang, Matthew Matl, and David Wentzlaff. OpenPiton: An Emerging Standard for Open-Source EDA Tool Development. In *WOSET: Proceedings of the Workshop on Open-Source EDA Technology co-located with ICCAD 2018*, 2018.

Mohammad Shahrad, Arsalan Mosenia, Liwei Song, Mung Chiang, David Wentzlaff, and Prateek Mittal. Acoustic denial of service attacks on hard disk drives. In *ASHES: Proceedings of the 2018 Workshop on Attacks and Solutions in Hardware Security*, pages 34–39, 2018.

Tri M. Nguyen and David Wentzlaff. PiCL: a software-transparent, persistent cache log for non-volatile main memory. In *MICRO: Proceedings of the IEEE/ACM International Symposium on Microarchitecture*, 2018.

Tri M. Nguyen, Adi Fuchs, and David Wentzlaff. CABLE: a CAche-Based Link Encoder for Bandwidth-starved Manycores. In *MICRO: Proceedings of the IEEE/ACM International Symposium on Microarchitecture*, 2018.

Adi Fuchs and David Wentzlaff. Scaling datacenter accelerators with compute-reuse architectures. In *ISCA: Proceedings of the ACM/IEEE International Symposium on Computer Architecture*, 2018.

Michael McKeown, Alexey Lavrov, Mohammad Shahrad, Paul J. Jackson, Yaosheng Fu, Jonathan Balkind, Tri M. Nguyen, Katie Lim, Yanqi Zhou, and David Wentzlaff. Power and energy characterization of an open source 25-core manycore processor. In *HPCA: Proceedings of the IEEE Symposium on High Performance Computer Architecture*, pages 762–775, 2018.

Ting-Jung Chang, Zhuozhi Yao, Paul J. Jackson, Barry P. Rand, and David Wentzlaff. Architectural tradeoffs for biodegradable computing. In *MICRO: Proceedings of the IEEE/ACM International Symposium on Microarchitecture*, MICRO-50, October 2017.

Mohammad Shahrad, Cristian Klein, Liang Zheng, Mung Chiang, Erik Elmroth, and David Wentzlaff. Incentivizing self-capping to increase cloud utilization. In *SoCC: Proceedings of the ACM Symposium on Cloud Computing*, SoCC '17, September 2017.

Mohammad Shahrad and David Wentzlaff. Towards deploying decommissioned mobile devices as cheap energy-efficient compute nodes. In *HotCloud: Proceedings of the USENIX Workshop on Hot Topics in Cloud Computing*, July 2017.

Michael McKeown, Yaosheng Fu, Tri Nguyen, Yanqi Zhou, Jonathan Balkind, Alexey Lavrov, Mohammad Shahrad, Samuel Payne, and David Wentzlaff. Piton: A manycore processor for multi-tenant clouds. *IEEE Micro*, pages 70–80, March/April 2017.

Yanqi Zhou, Sameer Wagh, Prateek Mittal, and David Wentzlaff. Camouflage: Memory traffic shaping to mitigate timing attacks. In *HPCA: Proceedings of the IEEE Symposium on High Performance Computer Architecture*, HPCA '17, pages 337–348. IEEE Computer Society, February 2017.

Mohammad Shahrad and David Wentzlaff. Availability Knob: Flexible user-defined availability in the cloud. In *SoCC: Proceedings of the ACM Symposium on Cloud Computing*, SoCC '16, pages 42–56. ACM, 2016.

Michael McKeown, Yaosheng Fu, Tri Nguyen, Yanqi Zhou, Jonathan Balkind, Alexey Lavrov, Mohammad Shahrad, Samuel Payne, and David Wentzlaff. Piton: A 25-core academic manycore processor. In *Hot Chips: Proceedings of Hot Chips*, August 2016.

Yanqi Zhou and David Wentzlaff. MITTS: Memory inter-arrival time traffic shaping. In *ISCA: Proceedings of the ACM/IEEE International Symposium on Computer Architecture*, ISCA '16, pages 532–544. IEEE Press, 2016.

Yanqi Zhou, Henry Hoffmann, and David Wentzlaff. CASH: Supporting IaaS customers with a sub-core configurable architecture. In *ISCA: Proceedings of the ACM/IEEE International Symposium on Computer Architecture*, ISCA '16, pages 682–694. IEEE Press, 2016.

Jonathan Balkind, Michael McKeown, Yaosheng Fu, Tri Nguyen, Yanqi Zhou, Alexey Lavrov, Mohammad Shahrad, Adi Fuchs, Samuel Payne, Xiaohua Liang, Matthew Matl, and David Wentzlaff. OpenPiton: An open source manycore research framework. In *ASPLOS: Proceedings of the ACM International Conference on Architectural Support for Programming Languages and Operating Systems*, ASPLOS '16, pages 217–232. ACM, 2016. **Nominated for Best Paper**.

Yaosheng Fu, Tri M. Nguyen, and David Wentzlaff. Coherence Domain Restriction on large scale systems. In *MICRO: Proceedings of the IEEE/ACM International Symposium on Microarchitecture*, MICRO-48, pages 686–698. ACM, 2015.

Tri M. Nguyen and David Wentzlaff. MORC: A manycore-oriented compressed cache. In *MICRO: Proceedings of the IEEE/ACM International Symposium on Microarchitecture*, MICRO-48, pages 76–88. ACM, 2015.

Michael McKeown, Jonathan Balkind, and David Wentzlaff. Execution Drafting: Energy efficiency through computation deduplication. In *MICRO: Proceedings of the IEEE/ACM International Symposium on Microarchitecture*, MICRO-47, pages 432–444. IEEE Press, Dec 2014.

Yaosheng Fu and David Wentzlaff. PriME: A parallel and distributed simulator for thousand-core chips. In *ISPASS: Proceedings of the IEEE International Symposium on Performance Analysis of Systems and Software*, pages 116–125, March 2014.

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David Wentzlaff, Christopher J. Jackson, Patrick Griffin, and Anant Agarwal. Configurable fine-grain protection for multicore processor virtualization. In *ISCA: Proceedings of the ACM/IEEE International Symposium on Computer Architecture*, ISCA '12, pages 464–475. IEEE Computer Society, 2012.

Lamia Youseff, Nathan Beckmann, Harshad Kasture, Charles Gruenwald, David Wentzlaff, and Anant Agarwal. The case for elastic operating system services in fos. In *DAC: Proceedings of the Annual Design Automation Conference*, DAC '12, pages 265–270. ACM, 2012.

David Wentzlaff, Charles Gruenwald III, Nathan Beckmann, Kevin Modzelewski, Adam Belay, Lamia Youseff, Jason Miller, and Anant Agarwal. An operating system for multicore and clouds: mechanisms and implementation. In *SoCC: Proceedings of the 1st ACM symposium on Cloud computing*, SoCC '10, pages 3–14. ACM, June 2010.

Henry Hoffmann, David Wentzlaff, and Anant Agarwal. Remote store programming. In *HiPEAC: Proceedings of High Performance Embedded Architectures and Compilers, 5th International Conference*, pages 3–17, January 2010.

David Wentzlaff, Charles Gruenwald III, Nathan Beckmann, Kevin Modzelewski, Adam Belay, Lamia Youseff, Jason Miller, and Anant Agarwal. A unified operating system for clouds and manycore: fos. In *CAOS: Proceedings of Workshop on Computer Architecture and Operating System co-design in conjunction with High Performance Embedded Architectures and Compilers*, January 2010.

David Wentzlaff and Anant Agarwal. Factored operating systems (fos): The case for a scalable operating system for multicores. *ACM SIGOPS Operating Systems Review*, 43(2):76–85, 2009.

Shane Bell, Bruce Edwards, John Amann, Rich Conlin, Kevin Joyce, Vince Leung, John MacKay, Mike Reif, Liewei Bao, John Brown, Matthew Mattina, Chyi-Chang Miao, Carl Ramey, David Wentzlaff, Walker Anderson, Ethan Berger, Nat Fairbanks, Durlov Khan, Froilan Montenegro, Jay Stickney, and John Zook. TILE64 processor: A 64-core SoC with mesh interconnect. In *ISSCC: Digest of Technical Papers of the IEEE International Solid-State Circuits Conference*, pages 88–89,598, 3-7 2008.

David Wentzlaff, Patrick Griffin, Henry Hoffmann, Liewei Bao, Bruce Edwards, Carl Ramey, Matthew Mattina, Chyi-Chang Miao, John F. Brown III, and Anant Agarwal. On-chip interconnection architecture of the tile processor. *IEEE Micro*, 27:15–31, 2007.

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David Wentzlaff and Anant Agarwal. Constructing virtual architectures on a tiled processor. In *CGO: Proceedings of the IEEE/ACM International Symposium on Code Generation and Optimization*, pages 173–184. IEEE Computer Society, 2006.

David Wentzlaff and Anant Agarwal. A quantitative comparison of reconfigurable, tiled, and conventional architectures on bit-level computation. In *FCCM: Proceedings of the Annual IEEE Symposium on Field-Programmable Custom Computing Machines*, pages 289–290. IEEE Computer Society, 2004.

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Jason Sungtae Kim, Michael B. Taylor, Jason Miller, and David Wentzlaff. Energy characterization of a tiled architecture processor with on-chip networks. In *ISLPED: Proceedings of the International Symposium on Low Power Electronics and Design*, pages 424–427. ACM, 2003.

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Book Chapters

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Patents

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David Wentzlaff, Fei Gao, and Georgios Tziantzioulis. System and method for in-memory compute. Patent, June 2021. US 11043259.

David M. Wentzlaff. Flow control in a parallel processing environment. Patent, May 2020. US 10642772.

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David M. Wentzlaff. Flow control in a parallel processing environment. Patent, June 2018. US 10002096.

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David Wentzlaff, Matthew Mattina, and Anant Agarwal. Managing cache memory in a parallel processing environment. Patent, May 2017. US 9639487.

David Wentzlaff. Flow control in a parallel processing environment. Patent, May 2016. US 9329798.

David Wentzlaff, Matthew Mattina, and Anant Agarwal. Managing cache memory in a parallel processing environment. Patent, March 2016. US 9298618.

Patrick Robert Griffin, Walter Lee, Anant Agarwal, and David Wentzlaff. Programming in a multiprocessor environment. Patent, April 2015. US 9009660.

Patrick Robert Griffin, Mathew Hostetter, Anant Agarwal, Chyi-Chang Miao, Christopher D. Metcalf, Bruce Edwards, Carl G. Ramey, Mark B. Rosenblunth, David M. Wentzlaff, Christopher J. Jackson, Ben Harrison, Kenneth M. Steele, John Amann, Richard Conlin, Kevin Joyce, Christine Deignan, Liewei Bao, Matthew Mattina, Ian Rudolf Bratt, and Richard Schooler. Computing in parallel processing environments. Patent, May 2014. US 8738860.

David Wentzlaff. Transferring and storing data in multicore and multiprocessor architectures. Patent, March 2014. US 8677081.

David Wentzlaff. Flow control in a parallel processing environment. Patent, January 2014. US 8635378.

Anant Agarwal and David Wentzlaff. Virtual architectures in a parallel processing environment. Patent, August 2013. US 8516222.

David Wentzlaff, Matthew Mattina, and Anant Agarwal. Managing cache memory in a parallel processing environment. Patent, June 2012. US 8200901.

Carl G. Ramey, David Wentzlaff, and Anant Agarwal. Managing data provided to switches in a parallel processing environment. Patent, May 2012. US 8190855.

David Wentzlaff and Anant Agarwal. Managing data provided to switches in a parallel processing environment. Patent, February 2012. US 8127111.

Anant Agarwal and David Wentzlaff. Virtual architectures in a parallel processing environment. Patent, December 2011. US 8078832.

Anant Agarwal and David Wentzlaff. Virtual architectures in a parallel processing environment. Patent, October 2011. US 8046563.

David Wentzlaff. Flow control in a parallel processing environment. Patent, September 2011. US 8018849.

David Wentzlaff, Matthew Mattina, and Anant Agarwal. Managing cache memory in a parallel processing environment. Patent, February 2011. US 7882307.

David Wentzlaff. Managing buffer storage in a parallel processing environment. Patent, December 2010. US 7853774.

David Wentzlaff. Managing data flows in a parallel processing environment. Patent, October 2010. US 7814242.

Matthew Mattina, David Wentzlaff, and Anant Agarwal. Managing memory access in a parallel processing environment. Patent, September 2010. US 7805577.

David Wentzlaff and Anant Agarwal. Directing data in a parallel processing environment. Patent, September 2010. US 7793074.

David Wentzlaff and Anant Agarwal. Protection in a parallel processing environment using access information associated with each switch to prevent data from being forwarded outside a plurality of tiles. Patent, August 2010. US 7774579.

Anant Agarwal and David Wentzlaff. Configuring sets of processor cores for processing instructions. Patent, June 2010. US 7734895.

David Wentzlaff and Anant Agarwal. Managing data forwarded between processors in a parallel processing environment based on operations associated with instructions issued by the processors. Patent, June 2010. US 7734894.

David Wentzlaff. Buffering data in a parallel processing environment. Patent, February 2010. US 7668979.

Carl G. Ramey, David Wentzlaff, and Anant Agarwal. Coupling data in a parallel processing environment. Patent, December 2009. US 7636835.

David Wentzlaff and Anant Agarwal. Managing memory in a parallel processing environment. Patent, November 2009. US 7624248.

David Wentzlaff, Matthew Mattina, and Anant Agarwal. Mapping memory in a parallel processing environment. Patent, November 2009. US 7620791.

David Wentzlaff and Anant Agarwal. Managing data in a parallel processing environment. Patent, August 2009. US 7577820.

David Wentzlaff, Carl G. Ramey, and Anant Agarwal. Coupling integrated circuits in a parallel processing environment. Patent, May 2009. US 7539845.

David Wentzlaff. Transferring data in a parallel processing environment. Patent, December 2008. US 7461236.

David Wentzlaff, Matthew Mattina, and Anant Agarwal. Managing set associative cache memory according to entry type. Patent, December 2008. US 7461210.

Tech Reports Yanqi Zhou, Ramnatthan Alagappan, Amir Samam Memaripour, Anirudh Badam, and David Wentzlaff. HNVM: Hybrid NVM Enabled Datacenter Design and Optimization. Microsoft Research Tech Report MSR-TR-2017-8, February 2017.

Adam Belay, David Wentzlaff, and Anant Agarwal. Vote the OS off your Core. MIT CSAIL Tech Report 2011-035, July 2011.

David Wentzlaff, Charles Gruenwald III, Nathan Beckmann, Adam Belay, Harshad Kasture, Kevin Modzelewski, Lamia Youseff, Jason E. Miller, and Anant Agarwal. Fleets: Scalable Services in a Factored Operating System. MIT CSAIL Tech Report 2011-012, March 2011.

David Wentzlaff, Nathan Beckmann, Jason Miller, and Anant Agarwal. Core Count vs Cache Size for Manycore Architectures in the Cloud. MIT CSAIL Tech Report 2010-008, February 2010

Talks

Aug. 2023	"Computer Architecture in a Supply Chain Uncertain World" Invited Talk at DARPA ERI 2.0 Summit Securing the U.S. Electronics Supply Chain Workshop, Seattle, WA.
Jan. 2020	"OpenPiton: An Open-Source Framework for EDA Tool Development" Talk at FOSDEM 2020, Brussels, Belgium.
Oct. 2019	"Limits of Architectural Innovation" Invited talk at the DoE/SRC Workshop on New Compute Trajectories for Energy-Efficient Computing.
July 2019	"The Accelerator Wall: Limits of Chip Specialization" Invited talk at the DARPA ERI Summit.
May 2018	"Is Cloud Competition Needed? Desirable? Inevitable?" Invited NSF Workshop on Cloud Economics. Stanford University.
April 2018	"Microprocessors for the Mega-Core Data Center and Giga-Scale Biodegradable Future" Invited Seminar. University of Illinois at Urbana Champaign.
April 2018	"Microprocessors for the Mega-Core Data Center and Giga-Scale Biodegradable Future" Invited Seminar. University of California, Berkeley, CA.

February 2018	"Microprocessors for the Mega-Core Data Center and Giga-Scale Biodegradable Future" Invited Seminar. University of Washington, WA.
Oct. 2017	"Processors for the Data Center and Cloud of the Future" Invited Seminar. Stanford University.
Sept. 2017	"Processors for the Data Center and Cloud of the Future" Google Platforms Group Invited Talk. Google, Sunnyvale, CA.
May 2017	"Processors for the Data Center and Cloud of the Future" Invited Seminar. École Polytechnique Fédérale de Lausanne (EPFL).
May 2017	"Processors for the Data Center and Cloud of the Future" Invited Seminar. Computer Laboratory, University of Cambridge, UK.
April 2017	"Creating a Marketplace of IDEAs" Invited Speaker at the DARPA IDEA Workshop.
April 2017	"Processors for the Data Center and Cloud of the Future" Invited Seminar. University of Illinois at Urbana-Champaign.
April 2017	"Processors for the Data Center and Cloud of the Future" Invited Seminar. University of Chicago.
March 2017	"Processors for the Data Center and Cloud of the Future" Google Tech Talk. Google, Cambridge, MA.
Feb. 2017	"Processors for the Data Center and Cloud of the Future" Invited Seminar. University of Michigan.
Nov. 2016	"Processors for the Data Center and Cloud of the Future" Invited Seminar. University of California Berkeley.
Nov. 2016	"Processors for the Data Center and Cloud of the Future" Invited Speaker Series. The State University of New York at Binghamton.
Nov. 2016	"Processors for the Data Center and Cloud of the Future" Invited Seminar. University of Washington.
Nov. 2016	"Processors for the Data Center and Cloud of the Future" Invited Seminar. University of Texas at Austin.
Nov. 2016	"Processors for the Data Center and Cloud of the Future" Invited Seminar. Harvard University.
Nov. 2016	"Processors for the Data Center and Cloud of the Future" Invited Seminar. Massachusetts Institute of Technology.
Nov. 2016	"Processors for the Data Center and Cloud of the Future" Invited Seminar. Cornell University.
Oct. 2016	"The Next Million Core Data Center Processor will be Open Sourced" School of Computing Seminar. Clemson University.
Oct. 2016	"Processors for the Data Center and Cloud of the Future" Invited Seminar. University of Wisconsin–Madison.
Sept. 2016	"Processors for the Data Center and Cloud of the Future" Invited Seminar. Carnegie Mellon University.
March 2016	"Megacore Open Sourced!" Keynote at the Workshop on Multicore and Rack-scale Systems (MaRS'16) co-held with EuroSys 2016.
June 2015	"Designing a Complex 25-Core Academic Processor" Workshop on Architectural Research Prototyping (WARP'15).
March 2015	"Architecting Biodegradable Computers" Wild and Crazy Ideas (WACI) Session at ACM International Conference on Architectural Support for Programming Languages and Operating Systems.

July 2014	"How Processor Architecture Changes when Optimized for Infrastructure as a Service Clouds (IaaS)" Invited Seminar. University of Washington.
Feb. 2014	"How Processor Architecture Changes when Optimized for Infrastructure as a Service Clouds (IaaS)" Invited Seminar. University of Illinois at Urbana-Champaign.
Dec. 2013	"Configurable Fine Grain Protection: How to Update Multicore Protection Systems for Complex OS Needs" VMWare Tech Talk, VMWare, Palo Alto, CA.
Feb. 2013	"The Future of Online Education: An Assistant Faculty's View" Columbia CS Faculty Retreat (Invited Talk and Panel Member). Columbia University CS Faculty Retreat.
Nov. 2012	"Optimizing Processors for Tomorrow's Data Center" Computer Systems Symposium. University of California Berkeley.
June 2012	"Configurable Fine-grain Protection for Multicore Processor Virtualization" International Symposium on Computer Architecture (ISCA).
Mar. 2012	"Steam Power: The Data Center's New Killer Application" Provocative Ideas Session at ACM International Conference on Architectural Support for Programming Languages and Operating Systems.
Dec. 2011	"Creating the Mega-core Cloud: Architecture and Sustainable Design" Invited Seminar. IBM T.J. Watson Research Center.
April 2011	"Mechanisms for Usable Multicores" Invited Seminar. University of Illinois at Urbana-Champaign.
April 2011	"Mechanisms for Usable Multicores" Invited Seminar. University of Washington.
April 2011	"Mechanisms for Usable Multicores" Invited Seminar. University of Texas at Austin.
March 2011	"Mechanisms for Usable Multicores" Invited Seminar. Stanford University.
March 2011	"Mechanisms for Usable Multicores" Invited Seminar. University of Michigan.
March 2011	"Mechanisms for Usable Multicores" Invited Seminar. Princeton University.
March 2011	"Mechanisms for Usable Multicores" Invited Seminar. University of Waterloo, Ontario, Canada.
March 2011	"Mechanisms for Usable Multicores" Invited Seminar. University of Minnesota.
Feb. 2011	"Mechanisms for Usable Multicores" Invited Seminar. John Hopkins University.
Feb. 2011	"Mechanisms for Usable Multicores" Invited Seminar. University of California Los Angeles.
Sept. 2010	"fos: An Operating System for Clouds and Multicore". The IBM Student Workshop for Frontiers of Cloud Computing - IBM F2C2.
June 2010	"An Operating System for Multicore and Clouds: Mechanisms and Implementation" ACM symposium on Cloud computing (SoCC).
Jan. 2010	"A Unified Operating System for Clouds and Manycore: fos" Workshop on Computer Architecture and Operating System co-design (CAOS).
March 2008	"Computation: A Byproduct of Home Water Heaters" Wild and Crazy Ideas (WACI) Session at ACM International Conference on Architectural Support for Programming Languages and Operating Systems.
March 2006	"Constructing Virtual Architectures on a Tiled Processor" IEEE/ACM International Symposium on Code Generation and Optimization (CGO).

Open-Source Projects

PRGA: The Princeton Reconfigurable Gate Array is a highly configurable, open-source FPGA
`https://github.com/PrincetonUniversity/prga`

OpenPiton: OpenPiton is the world's first open source, general-purpose, multithreaded manycore processor and framework. OpenPiton is a highly configurable version of the 25-core Princeton Piton Processor

http://www.openpiton.org

OPDB: OpenPiton Design Benchmark is a scalable, modular, heterogeneous, and extensible design benchmark for the EDA community

https://github.com/PrincetonUniversity/OPDB

PriME: The Princeton Manycore Executor is a distributed, parallel, manycore simulator capable of simulating 4000+ core configurations using hundreds of host cores across a cluster.

http://primesim.princeton.edu

Funding

2022	Awarded Andlinger Center Grant for Innovative Research in Energy and the Environment for "Systems Methods Toward Sustainable Electronics"
2018	Awarded DARPA SDH Sub-Contract for "DECADES: Deeply-Customized Accelerator-Oriented Data Supply Systems Synthesis"
2018	Awarded DARPA POSH Award for "CIFER: Coherent Interconnect and FPGA Enabling Reuse"
2018	Awarded DARPA IDEA Award for "ORDER: Open-Source Rooted Design Experts with Repute"
2018	Awarded National Science Foundation Research Grant for "SPX: Collaborative Research: Rethinking Data Center Abstractions Utilizing Warehouse- Scale Shared Memory" ($500,000)
2018	Awarded National Science Foundation Research Grant for "CRI: CI-New: OpenPiton 2: Enabling Open Source Manycore Hardware Research" ($500,000)
2017	Awarded National Science Foundation Travel Grant for "Student Travel Support for the 50th IEEE/ACM Symposium on Microarchitecture (MICRO)" ($20,000)
2017	Awarded Xilinx Equipment Donation (Valued at $12,492)
2016	Awarded Digilent Equipment Donation (Valued at $6,000)
2016	Awarded Nokia Donation ($52,185)
2015	Awarded Princeton University School of Engineering and Applied Sciences, E. Lawrence Keyes, Jr. / Emerson Electric Co. Faculty Advancement Award ($40,000)
2015	Awarded National Science Foundation CAREER Award entitled "CAREER: Commonality Exploiting Architectures for Energy Efficiency" ($511,176)
2015	Awarded DARPA Sub-Contract for "Parameter Variations at Near Threshold Voltage: The Power Efficiency versus Resiliency Trade-off" ($130,000)
2015	Awarded Xilinx Equipment Donation (Valued at $3,495)
2015	Piton Chip Fabrication Costs paid direct from DARPA prime contractor to chip fabricator ($322,460)
2014	Awarded DARPA Young Faculty Award for "Looking Beyond the Dark, Rethinking General Purpose Computer Architecture for UAV and Space Processing" ($500,000)
2014	Awarded National Science Foundation Research Grant for "XPS: FULL: CCA: Collaborative Research: CASH: Cost-aware Adaptation of Software and Hardware" ($300,000)
2014	Awarded DARPA Sub-Contract Extension for "Carbon: Organic Computing for Embedded Applications" ($258,876)

2014	Awarded Air Force Office of Scientific Research Young Investigator Program Grant for "Megacore Operating System and Chip Architecture Co-Design" ($360,000)
2014	Awarded Princeton Project X Grant "Removing the Search from Search-and-Rescue: Multi-Party Search Leveraging Mobile Computation" ($150,000)
2013	Awarded National Science Foundation Research Grant for "EAGER: Architectures for Biodegradable Processors" ($160,561)
2013	Awarded Princeton University Grant to Transition ELE/COS 475 into Online Coursera Course ($17,000)
2013	Awarded together with Prof. Jason Fleischer Princeton University 250th Anniversary Fund grant to redesign ELE 301. ($33,000)
2012	Awarded DARPA Sub-Contract for "Carbon: Organic Computing for Embedded Applications" ($275,000)
2012	Awarded Intel Equipment Donation (Valued at $106,440)
2012	Awarded NVIDIA Equipment Donation (Valued at $1,399)
2012	Awarded Xilinx Equipment Donation (Valued at $3,788)
2012	Awarded Princeton University Grant to Transition ELE/COS 475 into Online Coursera Course ($12,150 plus $10,000 Summer Salary)
2012	Awarded National Science Foundation Research Grant for "SHF: Small: Redesigning Manycore Computer Architecture for the Mega-core Data Center" ($300,000)
2011	Awarded AMD Equipment Donation (Valued at $1,259)
2011	Awarded Xilinx Equipment Donation (Valued at $1,898)
2011	Awarded Altera Equipment Donation (Valued at $255)
2011	Awarded NVIDIA Equipment Donation (Valued at $1,886)

Technical Service

2024	Program Committee Member for the ACM/IEEE International Symposium on Computer Architecture (ISCA)
2023	Program Committee Member for the ACM/IEEE International Symposium on Computer Architecture (ISCA)
2022	Program Committee Member for the ACM/IEEE International Symposium on Computer Architecture (ISCA)
2020	Program Committee Member for the ACM/IEEE International Symposium on Computer Architecture (ISCA)
2019	Program Committee Member for the ACM/IEEE International Symposium on Computer Architecture (ISCA)
2019	Program Committee Member for the International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)
2018	Program Committee Member for the IEEE/ACM International Symposium on Microarchitecture (MICRO)
2018	Program Committee Member for the ACM/IEEE International Symposium on Computer Architecture (ISCA)

2017	Student Liaison and Travel Award Chair for the IEEE/ACM International Symposium on Microarchitecture (MICRO)
2017	Program Committee Member for the IEEE International Symposium On High Performance Computer Architecture (HPCA)
2016	Organizer of the Tutorial, "An Introduction to OpenPiton a Manycore Open Source Processor" co-held with HPCA-2017
2016	Program Committee Member for the International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)
2016	Program Committee Member for the ACM/IEEE International Symposium on Computer Architecture (ISCA)
2016	Organizer of the Tutorial, "An Introduction to OpenPiton a Manycore Open Source Processor" co-held with ISCA-2016
2015	Participant in the White House Workshop on the National Strategic Computing Initiative (NSCI)
2015	Co-Organizer of the Workshop on Architectural Research Prototyping (WARP) co-held with ISCA-2015
2015	Program Committee Member for the IEEE/ACM International Symposium on Microarchitecture (MICRO)
2015	Panelist for NSF Grant Review
2015	Program Committee Member for the IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS)
2014	Program Committee Member for the ACM/IEEE International Symposium on Computer Architecture (ISCA)
2014	Workshop Chair for the ACM/IEEE International Symposium on Computer Architecture (ISCA)
2014	Program Committee Member for the IEEE International Symposium On High Performance Computer Architecture (HPCA)
2014	Program Committee Member for the IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS)
2013	Panelist for NSF Grant Review
3/2013	Program Committee Member for the International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)
2012	Panelist for NSF Grant Review
5/2012	Program Committee Member for the IEEE International Parallel and Distributed Processing Symposium (IPDPS)
6/2010	Participant in DARPA ISAT Future Ideas Symposium
9/2003	Program Chair of the MIT Student Oxygen Workshop
Various	Reviewer for IEEE Transactions on Parallel and Distributed Systems, ASPLOS, ISCA, MICRO, HPCA, SPAA, PACT

Princeton Service

Spring '23–present	Director of Undergraduate Studies Department of Electrical and Computer Engineering
Summer '23	Participated as a mentor in the Princeton-Intel REU program and mentored two undergraduates

Fall '22	Associate Director of Undergraduate Studies Department of Electrical and Computer Engineering
AY '22/'23	Member of the Electrical and Computer Engineering Department Hiring Committee
AY '22/'23	Member of the DeCenter Hiring Committee
AY '22/'23	Member of the DeCenter Steering Committee
Summer '22	Participated as a mentor in the Princeton-Intel REU program and mentored three undergraduates
AY '21/'22	Member of the Electrical Engineering Department Hiring Committee
AY '19/'20	Member of the Electrical Engineering Department Hiring Committee
AY '19/'20	Member of the Electrical Engineering Department Undergraduate Committee
AY '18/'19	Member of the Electrical Engineering Department Undergraduate Committee
AY '18/'19	Member of the Electrical Engineering Department Website Committee
2014–2017	Member of the Committee on Committees
AY '17/'18	School of Engineering and Applied Sciences Freshman Advisor
AY '16/'17	School of Engineering and Applied Sciences Freshman Advisor
AY '16/'17	Member of the Electrical Engineering Department Hiring Committee
AY '14/'15	Member of the School of Engineering and Applied Sciences Graduate and Postdoctoral Experiences Self-Study Subcommittee
2013–2016	Member of the Faculty Committee on the Library and Computing
AY '15/'16	School of Engineering and Applied Sciences Freshman Advisor
AY '14/'15	School of Engineering and Applied Sciences Freshman Advisor
AY '12/'13	School of Engineering and Applied Sciences Freshman Advisor
AY '12/'13	Member of the Electrical Engineering Department Hiring Committee
2011–present	Faculty Fellow, Butler College

Ph.D. Research Students

Yanqi Zhou (Now at Google Brain) FPO Completed May 2018.

Yaosheng Fu (Now at NVIDIA Research) FPO Completed Sept. 2017.

Michael McKeown (Now at NVIDIA) FPO Completed Dec. 2019.

Tri Nguyen (Now at Harvard University) FPO Completed Sept. 2018.

Jonathan Balkind (Now at the University of California Santa Barbara) FPO Completed May 2022.

Zhuozhi Yao (Co-advised with Prof. Barry Rand) FPO Completed March 2023.

Adi Fuchs (Now at SPEEDDATA) FPO Completed May 2019.

Alexey Lavrov (Now at Microsoft) FPO Completed Oct. 2020.

Mohammad Shahrad (Now at the University of British Columbia) FPO Completed Jun. 2020.

Ting-Jung Chang (Now at NCKU Miin Wu School of Computing) FPO Completed Apr. 2022.

Paul Jackson (2015–present)

Ang Li (2016–present)

Fei Gao (2017–present)

Yuchen Liu (Now at Adobe Research) (Co-advised with Prof. Sun-Yuan Kung) FPO Completed Oct. 2022.

Grigory Chirkov (2018–present)

Jinzheng Tu (2018–present)

Kaifeng Xu (2019–present)

Marcelo Orenes-Vera (Co-advised with Prof. Margaret Martonosi) (2019–present)

Rohan Prabhakar (2020–present)

August Ning (2020–present)

Haiyue Ma (2022–present)

Hengrui Zhang (2023–present)

Qixuan 'Maki' Yu (2023–present)

Zixi Li (2023–present)

Undergraduate Research Advising

Parker Connelly (Senior Theis 2024)

Angelo Gonzalez (Senior Thesis 2024)

Christopher Roberts (Senior Thesis 2024)

Siddharth Vetrivel (Independent Work 2023)

Jaebyeok Yoon (Independent Work 2022, Senior Thesis 2023, and MEng Independent Work Fall 2023)

Marlon Escobar (Independent Work 2022 and Senior Thesis 2023)

David Booth (Senior Thesis 2022)

William Stevens (Senior Thesis 2022)

Sabrina Reguyal (Independent Work 2021)

Matthew Nicholas (Senior Thesis 2019)

Kevin Liu (Independent Work 2018)

Kathleen Feng (Senior Thesis 2018)

Vicent Po (Senior Thesis 2018)

Katie Lim (Independent Work 2017 and Senior Thesis 2018)

Haley Chow (Senior Thesis 2017)

Rebecca Sichel (Senior Thesis 2017)

Shreyes Joshi (Senior Thesis 2017)

Felix Madutsa (Independent Work 2017)

Matthew Matl (Senior Thesis 2016)

Xiaohua (Victor) Liang (Independent Work 2015 and Senior Thesis 2016)

Ryan O'Shea (Senior Thesis 2016)

Aaron Himelman (Senior Thesis 2015)

Glenn Fischer (Senior Thesis 2015)

Peter de Groot (2 Semesters Independent Work 2015)

Samuel Payne (Senior Thesis 2014)

Rahul Subramanian (2 Semesters Independent Work 2014)

Abdulrahman Mahmoud (2 Semesters Independent Work 2013)

Rachael Batchelder (2 Semesters Independent Work 2013)

Miscellaneous

Hobbies: Mountaineering, Rock Climbing, Hiking, Figure Skating

Current   IEEE Member

Current   ACM Member

9/2004–9/2011   MIT Outing Club (Hiking Club)

– Organized 2009 Winter School. We taught 180 students how to hike, climb, and camp in the winter.

1/2008,1/2009,1/2010   Winter School Leader

5/2007-9/2011   Webmaster

8/1997–5/2000   ACM at the University of Illinois at Urbana-Champaign

8/1998–5/2000   Chair of ACM at UIUC SIGOPS

Citizenship: USA

This curriculum vitae was last updated on January 31, 2024.