Stephen Zekany

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Education

University of Michigan

Ph.D. Computer Science and Engineering (GPA: 3.6/4.0)	9/2016 – 4/2022 (expected)
M.S. Computer Science and Engineering (GPA: 3.7/4.0)	1/2014 – 5/2016
Non-degree Undergraduate in Computer Science (GPA: 3.9/4.0)	5/2012 – 12/2013
B.S. Physics (GPA: 2.8/4.0)	9/2004 – 12/2008

Research Experience

Research Assistant, Wenisch Lab, University of Michigan 2018 – Present
Mentors: Thomas Wenisch and Ronald Dreslinski

- Seeking to find new ways to structure and search data from autonomous vehicles, especially video data, in collaboration with Toyota Research Institute.

Research Engineer Intern, HPC Research Group, Arm (Austin, TX) Summer 2018
Mentors: Eric Van Hensbergen and Luis Pena

- Worked on identifying constraints of high-performance networking hardware for containerization and VM use.

Research Engineer Intern, HPC Research Group, Arm (Austin, TX) Summer 2017
Mentor: Geoff Blake

- Improved network packet polling loop structure for OS-bypass version of memcached.

Research Assistant, Clarity Lab, University of Michigan 2015 – 2016
Mentors: Michael Laurenzano and Jason Mars

- Worked on partial reconfiguration for FPGAs, and hot path compiler project.

Publications

Peer-Reviewed Conference Papers and Journal Publications

1. **Stephen Zekany**, Jielun Tan, and Ronald Dreslinski. RISC-V Reward: Building Out-of-Order Processors in a Computer Architecture Design Course with an Open-Source ISA. To appear in *ACM Technical Symposium on Computer Science Education (SIGCSE), 2021.*
2. **Stephen Zekany**, Ronald Dreslinski, and Thomas Wenisch. Classifying Ego-Vehicle Road Maneuvers from Dashcam Video. *IEEE Intelligent Transportation Systems Conference (ITSC), 2019.*
3. **Stephen Zekany**, Daniel Rings, Nathan Harada, Michael Laurenzano, Lingjia Tang, and Jason Mars. CrystalBall: Statically Analyzing Runtime Behavior via Deep-Sequence Learning. *IEEE/ACM International Symposium on Microarchitecture (MICRO), 2016.*

Works in Progress

1. **Stephen Zekany**, Thomas Larsen, Ronald Dreslinski, and Thomas Wenisch. Searching and Indexing Vehicle Maneuvers within Dashcam Video. Under submission to *IEEE Transactions on Intelligent Transportation Systems (T-ITS).*

Research Interests

computer architecture, compilers, applied computer vision, intelligent transportation systems, computer science education

Non-Academic Work Experience

Research Assistant, Center for Entrepreneurship, University of Michigan January 2017 – April 2017

- Evaluated market potential and industry viability of potential technology transfer projects.

CPU Design Engineer Intern, Arm (Austin, TX) Summer 2015

- Built SystemVerilog interface to preload special purpose register values for verification of Arm Cortex-A76 CPU.

Software Engineer Intern, Boeing (Seattle, WA) Summer 2014

- Worked on supply chain management databases and web applications.

Research Lab Specialist, Psychology Department, University of Michigan 2010 – 2013
Senior Research Lab Technician, Psychology Department, University of Michigan 2009 – 2010

- Maintained lab equipment, performed data analysis, wrote software for running experiments and analysis, and supervised undergraduate students in a neuropsychology research lab.

Teaching and Mentoring

Instructor
EECS 370: Intr. to Computer Organization (Undergraduate, University of Michigan) Winter 2020

- Taught a required course with three other faculty and 594 students covering introductory computer architecture concepts including assembly language, combinational and sequential logic, single-cycle datapaths, pipelined processors, and caching algorithms. Met with students in office hours, answered student questions online, managed a team of 18 TAs, and transitioned course online mid-semester due to COVID. Course web page available at https://www.eecs.umich.edu/courses/eecs370/.

Teaching Assistant
EECS 470: Computer Architecture (Graduate, University of Michigan) Winter 2015 – Fall 2018

- Assisted in teaching a graduate course on computer architecture of 60 students, covering in-order pipelining, out-of-order pipelining, superscalar processors, caching and memory hierarchies, and compile-time optimizations. Helped students with final team project of developing a fully-synthesizable out-of-order processor in SystemVerilog. Tutored groups who wanted to do advanced features such as multi-core or simultaneous multi-threading. Taught two lab sections each week on SystemVerilog concepts, met with students in office hours, answered student questions online, helped write exams, and graded student projects. Course web page available at https://www.eecs.umich.edu/courses/eecs470/.

ALA 223: Entrepreneurial Creativity (Undergraduate, University of Michigan) Fall 2014

- Helped design and teach first semester of an elective course offered as part of the Minor in Entrepreneurship Program. Taught several lectures, met with students in office hours, answered student questions online, and graded student papers and projects.

Outreach
Community Instructor, Ann Arbor Public Schools January 2018 – June 2018

- Taught an introductory programming course (EECS 183 with modifications) to high school students as part of the Ann Arbor Public Schools Community Resource program. Students watched recorded lectures, worked on assignments, and met with me twice weekly. I graded their work, wrote quizzes and tests, and answered any questions.

Mentorship

Center for Research on Learning and Teaching (University of Michigan) 2018-2020

- Conducted midterm student feedback sessions for teaching assistants, helped teaching assistants struggling with classroom issues, and taught seminars on applied educational research.

Undergraduate and Graduate Teaching Assistant Orientation (University of Michigan) 2018-2020

- Instructed several 90-minute sections of 30-90 new teaching assistants (both fall and winter term), including "Effective Lab Classes" and "Teaching Engineering".

Guest Lecturer

EECS 470: Computer Architecture (University of Michigan) Winter 2019
EECS 599: Introduction to Graduate Studies (University of Michigan) Fall 2019

Service and Membership

Institutional and Departmental Service

Member, CSE DEI Working Group 2020
President, CSE Graduate Students at U-M (CSEG) 2019 - 2020
Student-Faculty Liaison, CSE Graduate Students at U-M (CSEG) 2018 - 2019
Reading Group Moderator, CELab, University of Michigan 2018 - 2019

Non-Profit Affiliations

Board Member, Friends of the Washtenaw Veterans Treatment Court 2016 - Present
Scoutmaster, Boy Scout Troop 8 2010 - 2018

Reviewing

ACM Technical Symposium on Computer Science Education (SIGCSE), PC member 2020
Innovation and Technology in Computer Science Education (ITiCSE), PC member 2020

Academic Affiliations

ACM: Association for Computing Machinery
IEEE Eta Kappa Nu (IEEE-HKN)

Awards

EECS Outstanding GSI Award 2018
Non-Traditional Graduate Fellowship Award 2015