ANDREW QUINN

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RESEARCH INTERESTS

My research aims to make it easier for developers to build correct and efficient software systems. I propose techniques and systems that change the way developers debug their software, build tools that automatically find bugs, and perform taxonomies of the bugs we see in software that use emerging hardware platforms. My work builds on insights from across systems, programming languages, software engineering, and computer architecture.

EDUCATION

University of Michigan *Ann Arbor, MI*
Ph.D., Computer Science and Engineering (Sep 2015–Dec 2021)
Thesis: Data-Centric Execution Inspection

University of Michigan *Ann Arbor, MI*
M.S., Computer Science and Engineering (Sep 2015–May 2017)

Denison University *Granville, OH*
B.S., Computer Science and B.A., Mathematics (Aug 2010–May 2014)
Honors: *summa cum laude*, Phi Beta Kappa, Deans List

AWARDS

1. **Meta**. Finalist for Silent Data Corruptions at Scale (2022)
2. **IEEE Micro Top Pick Honorable Mention**. "Agamotto" (2021)
3. **OSDI Student Travel Grant**. (2018)
4. **SOSP Student Travel Grant**. (2017)
5. **OSDI Student Travel Grant**. (2016)
6. **John L. Gilpatrick Mathematics Award, Denison University**. Awarded to the most outstanding senior major in the Math and CS department (2014)
7. **Ted Barclay Top Five Student Athlete, Denison University**. Awarded to the top five student athletes at Denison University based on GPA. (2014)

FUNDING

1. **Google Gift**. Co-author of "Towards Fuzzing for Production Bugs" award. (2021)
2. **Microsoft Research Fellowship**. Two year fellowship awarded to nine Ph.D. students. (2017)
3. **National Science Foundation Graduate Student Research Fellowship**. Three year fellowship. (2017)

PEER-REVIEWED CONFERENCE PUBLICATIONS

1. **Andrew Quinn**, Michael Cafarella, Jason Flinn, and Baris Kasikci. *Debugging the OmniTable Way.* In Proceedings of the 2022 USENIX Symposium on Operating Systems Design and Implementation (OSDI). July 2022. Acceptance Rate: $49/253 = 19.4\%$
2. Jiacheng Ma, Gefei Zuo, Kevin Loughlin, Haoyang Zhang, **Andrew Quinn**, and Baris Kasikci. *Debugging in the Brave New World of Reconfigurable Hardware.* In Proceedings of the Twenty-Seventh International

Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS). February 2022. Acceptance Rate: 80/397 = 20.1%

3. Gefei Zuo, Jiacheng Ma, **Andrew Quinn**, Pramod Bhatotia, Pedro Fonseca, and Baris Kasikci. *Reproducing Production Failures with Execution Reconstruction.* In Proceedings of the 42nd ACM SIGPLAN Conference on Programming Language Design and Implementation. June 2021. Acceptance Rate: 87/320 = 27.2%
4. Ian Neal, **Andrew Quinn**, and Baris Kasikci. *Hippocrates: Healing Persistent Memory Bugs Without Doing Any Harm.* In the Proceedings of the Twenty-Sixth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS). April 2021. Acceptance Rate: 75/398 = 18.8%
5. Ian Neal, Ben Reeves, Ben Stoler, **Andrew Quinn**, Youngjin Kwon, Simon Peter and Baris Kasikci. *Agamotto: How Persistent is your Persistent Memory Application?.* In Proceedings of the 2020 USENIX Symposium on Operating Systems Design and Implementation (OSDI). November 2020. Acceptance Rate: 70/398 = 17.6%
6. **Andrew Quinn**, Jason Flinn, and Michael Cafarella. *Sledgehammer: Cluster-fueled Debugging.* In Proceedings of the 2018 USENIX Symposium on Operating Systems Design and Implementation (OSDI). October 2018. Acceptance Rate: 47/264 = 17.8%
7. **Andrew Quinn**, David Devecsery, Peter M. Chen and Jason Flinn. *JetStream: Cluster-scale Parallelization of Information Flow Queries.* In Proceedings of the 2016 USENIX Symposium on Operating Systems Design and Implementation (OSDI). November 2016. Acceptance Rate: 47/267 = 17.6%

PEER-REVIEWED WORKSHOP PUBLICATIONS

1. Matt Furlong, **Andrew Quinn**, and Jason Flinn. *The case for Determinism on the Edge.* In 2nd USENIX Workshop on Hot Topics in Edge Computing (HotEdge). July 2019. Acceptance Rate: 22/39 = 56%
2. **Andrew Quinn**, Michael Cafarella, and Jason Flinn. *You can't debug what you can't see: Expanding observability with the OmniTable.* In Proceedings of the Workshop on Hot Topics in Operating Systems (HotOS). May 2019. Acceptance Rate: 30/125 = 24%

TALKS

1. **Data-Centric Debugging or: How I learned to stop worrying and use 'Big-Data' Techniques to Diagnose Software Bugs**. Berkeley/Stanford/UCSC Cloud Workshop (May 2022)
2. **You can't debug what you can't see: Expanding Observability with the OmniTable**. Workshop on Hot Topics in Operating Systems (HotOS) (May 2019)
3. **Sledgehammer: Cluster-fueled Debugging**. USENIX Symposium on Operating Systems Design and Implementation (OSDI) (Oct 2018)
4. **JetStream: Cluster-Scale Parallelization of Information Flow Queries**. USENIX Symposium on Operating Systems Design and Implementation (OSDI) (Nov 2016)
5. **Power Management for Malleable Job Scheduling**. Denison University department of Math and Computer Science FaST talk (Apr 2014)

SERVICE

PROFESSIONAL

1. **External Review Committee Member**. Architectural Support for Programming Languages and Operating Systems (ASPLOS) (2022)
2. **Program Committee Member**. European Conference on Computer Systems (Eurosys) (2022)

3. **Program Committee Member**. Programming Languages Design and Implementation (PLDI) Student Research Competition (2022)
4. **External Review Committee Member**. Architectural Support for Programming Languages and Operating Systems (ASPLOS) (2021)

OUTREACH

1. **Mentorship chair**. Symposium on Operating Systems Principles (SOSP) (2021)
2. **AMA Moderator**. Symposium on Operating Systems Principles (SOSP) (2021)
3. **Discover Engineering**. University of Michigan, Ann Arbor, MI (Aug 2019)
4. **Techie Club**. Georgian Heights Elementary, Columbus, OH (Aug 2014–Aug 2015)
5. **A Call to College**. Newark Elementary Schools, Newark, OH (Sep 2012–Dec 2013)

TEACHING

1. Spring 2022. UC Santa Cruz. CSE 130—Introduction to Computer Systems
2. Fall 2022. UC Santa Cruz. CSE 231—Advanced Operating Systems

PROFESSIONAL EXPERIENCE

1. **Graduate Student**. Advisor: Dr. Jason Flinn and Dr. Baris Kasikci, University of Michigan, Ann Arbor, MI (Sep 2015–Present)
2. **Research Intern**. Mentor: Dr. Suman Nath, Microsoft Corp., Redmond, WA (May 2017–Aug 2017)
3. **Software Development Engineer**. International Business Machines (IBM), Dublin, OH (Jun 2014–Aug 2015)
4. **Research Assistant in Online Algorithms**. Mentor: Dr. Jessen Havill, Denison University, Granville, OH (Aug 2013–May 2014) (May 2012–Aug 2012)
5. **Software Development Engineering Intern**. International Business Machines (IBM), Dublin, OH (May 2013–Aug 2013)