

Curriculum Vitae

Paul Gazzillo

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Education

- 2016 PhD Computer Science, Courant Institute, New York University, New York, NY
Advisors: Robert Grimm, Thomas Wies
Thesis: Analyzing Source Code Across Static Conditionals
- 2011 MS Computer Science, Courant Institute, New York University, New York, NY
Advisor: Robert Grimm
Thesis: Configuration-Preserving C Parsing
- 2003 BS Computer Science and Mathematics, Rutgers University, New Brunswick, NJ

Academic Positions

- 2018-Now Assistant Professor, University of Central Florida, Orlando, FL
- 2017-2018 Research Scholar, Stevens Institute of Technology, Hoboken, NJ
Co-Advisors: Eric Koskinen (Stevens Institute) and Michael Hicks (UMD College Park)
- 2016-2017 Post-Doctoral Associate, Yale University, New Haven, CT
Advisor: Eric Koskinen
- 2014-2015 MacCracken Fellow, New York University, New York, NY
Advisor: Thomas Wies
- 2011-2014 Research Assistant, New York University, New York, NY
Advisor: Robert Grimm
- 2010 Junior Research Scientist (Summer), New York University, New York, NY
Advisor: Robert Grimm

Industry Experience

- 2018 Core Team, Taraxa.io
- 2013 Software Engineering Intern (Summer), Google, Mountain View, CA
- 2009 Financial Software Development Intern (Summer), Bloomberg LP, New York, NY
- 2004-2008 Research Data Analyst, Educational Testing Service, Princeton, NJ
- 2000-2004 Programmer (Summers & Part-Time), Educational Testing Service, Princeton, NJ

Fellowships and Honors

- 2014-2015 MacCracken Fellowship, New York University
- Spr 2013 Global Research Initiative Fellowship, New York University Shanghai
- Oct 2012 SIGPLAN Research Highlight (for the PLDI 2012 paper on SuperC)
- May 2012 Matthew Smosna Prize, Courant Institute, New York University
- May 2005 Outstanding Contributor Award, Educational Testing Service

Sponsored Research

- NSF CCF-1840934 SHF: Small: Collaborative Research: Static Analysis Infrastructure for Variability-Aware Bug Detection and Translation of Highly-Configurable Software Systems. \$229k. Oct. 2018–2021. PI: Paul Gazzillo. (This is part of a multi-institution grant with UT Dallas.)

Refereed Journal Articles

- EATCS 2018 “How to add concurrency to smart contracts” by Thomas Dickerson, Paul Gazzillo, Maurice Herlihy, and Eric Koskinen. Bulletin of the European Association for Theoretical Computer Science. Number 124. 22-33, February 2018.

Refereed Conference Proceedings

- SPLC 2018 “Localizing Configurations in Highly-Configurable Systems” by Paul Gazzillo, Ugur Koc, ThanhVu Nguyen, and Shiyi Wei. International Systems and Software Product Line Conference, Challenge Track.
- ESEC/FSE 2017 “Kmax: Finding All Configurations of Kbuild Makefiles Statically” by Paul Gazzillo. Proceedings of the European Software Engineering Conference and ACM SIGSOFT Symposium on the Foundations of Software Engineering.
Acceptance Rate: 24.4% (72 out of 295 submissions)
- PODC 2017 “Adding Concurrency to Smart Contracts” by Thomas Dickerson, Paul Gazzillo, Maurice Herlihy, and Eric Koskinen. Proceedings of the 2017 ACM Symposium on Principles of Distributed Computing.
Acceptance Rate: 25.0% (38 out of 154 submissions)
- PODC 2017 “Brief Announcement: Proust: A Design Space for Highly-Concurrent Transactional Data Structures” by Thomas Dickerson, Paul Gazzillo, Maurice Herlihy, and Eric Koskinen. Proceedings of the 2017 ACM Symposium on Principles of Distributed Computing.
- PLDI 2017 “Decomposition Instead of Self-Composition for Proving the Absence of Timing Channels” by Timos Antonopoulos, Paul Gazzillo, Michael Hicks, Eric Koskinen, Tachio Terauchi, and Shiyi Wei. Proceedings of the ACM SIGPLAN 2017 Conference on Programming Language Design and Implementation.
Acceptance Rate: 14.6% (47 out of 322 submissions)
- PLDI 2012 “SuperC: Parsing All of C by Taming the Preprocessor” by Paul Gazzillo and Robert Grimm. Proceedings of the ACM SIGPLAN 2012 Conference on Programming Language Design and Implementation, pp. 323-334, June 2012.
Acceptance Rate: 18.8% (48 out of 255 submissions)
- SIGPLAN Research Highlights Paper**

Refereed Workshop Proceedings

- WTSC 2018 “Proof-Carrying Smart Contracts” by Thomas Dickerson, Paul Gazzillo, Maurice Herlihy, Vikram Saraph, and Eric Koskinen. Workshop on Trusted Smart Contracts, 2018.

Technical Reports

- 2018 “Multi-Objective Optimization in Large Software Product Lines” by Jeho Oh, Don Batory, and Paul Gazzillo. Technical Report TR-18-02, Department of Computer Science, 2018.
- 2017 “Proust: A Design Space for Highly-Concurrent Transactional Data Structures” by Thomas Dickerson, Paul Gazzillo, Maurice Herlihy, and Eric Koskinen. arXiv:1702.04866v1 16 Feb 2017.
- 2016 “Vertical Composition of Reversible Atomic Objects” by Timos Antonopoulos, Paul Gazzillo, Eric Koskinen, and Zhong Shao. Technical Report YALEU/DCS/TR1529, Computer Science Department, Yale University, 2016
- 2015 “Kmax: Analyzing the Linux Build System” by Paul Gazzillo. Technical Report TR2015-976, Computer Science Department, New York University, 2015.
- 2011 “Parsing all of C by taming the preprocessor” by Paul Gazzillo and Robert Grimm. Technical Report TR2011-939, Computer Science Department, New York University, 2011.

Patents

- 2017 Adding Concurrency to Smart Contracts (patent pending)
- 2014 Configuration-Preserving Preprocessor, 9,389,842, issued 2016
- 2013 Configuration-Preserving Preprocessor and Configuration-Preserving Parser, 8,806,456, issued 2014
- 2008 Data Structure for Defining a Chart, application 2008/0086679
- 2008 Method and System for XML Multi-Transform, 9,189,464, issued 2015

Dissertation

- 2016 “Analyzing Source Code Across Static Conditionals” by Paul Gazzillo. PhD Thesis, Department of Computer Science, New York University.

Talks

Localizing Configurations in Highly-Configurable Systems

- Sep 2018 International Systems and Software Product Line Conference, Challenge Track, Gothenburg, Sweden

Automating Safe and Secure Software Development

- Mar 2018 University of South Florida, Tampa, FL
- Mar 2018 University of Central Florida, Orlando, FL
- Feb 2018 University of Vermont, Burlington, VT

Kmax: Finding All Configurations of Kbuild Makefiles Statically

- Sep 2017 European Software Engineering Conference and Foundations of Software Engineering (ESEC/FSE).

Adding Concurrency to Smart Contracts

- Jul 2017 Symposium on Principles of Distributed Computing (PODC), Washington, DC
- Apr 2017 Shanghai Jiao Tong University, Shanghai, China
- Apr 2017 Yale University, New Haven, CT

Decomposition Instead of Self-Composition for Proving the Absence of Timing Channels

- Jun 2017 Programming Language Design and Implementation (PLDI), Universitat Politècnica de Catalunya, Barcelona, Spain
- Jun 2017 University of Maryland, College Park, MD
- Jun 2017 New England Programming Languages and Systems Symposium (NEPLS), University of Massachusetts, Lowell, MA

Topic: Enabling Variability-Aware Software Tools (SuperC and Kmax)

- Mar 2017 Feature-Oriented Software Development Conference (FOSD), Technische Universität Darmstadt, Darmstadt, Germany
- Sep 2016 NJ Programming Languages and Systems Seminar (NJPLS), Rutgers University, NJ
- Jan 2016 Carnegie Mellon University Institute for Software Research, Pittsburgh, PA
- Jan 2016 Yale University, New Haven, CT
- Nov 2015 IBM Programming Languages Day, Yorktown Heights, NY

Parsing All of C by Taming the Preprocessor

- Jan 2017 Eurosys Shadow Program Committee Workshop, Zurich, Switzerland
- Jun 2012 Programming Language Design and Implementation (PLDI), Beijing, China

GraphicML: A Markup Language for Describing Charts

- May 2006 John W. Tukey Seminar on Data Preparation and Presentation, ETS, Princeton, NJ

Software

Kmax I designed and built a Makefile abstract interpreter for analyzing configurations of the Linux build system (NYU TR 2015, ESEC/FSE 2017).

Concurrent smart contracts We created a prototype implementation with benchmarks (PODC 2017).

Blazer We created and implemented static analyses for finding complexity and side-channel attacks (PLDI 2017).

RAO I built a prototype implementation of the transactional universal construction for Reversible Atomic Objects (Yale TR 2016).

Courgette I contributed to Google Chrome's unique compression algorithm for enabling smaller software updates (Google Internship 2013).

SuperC I designed and built a framework for configuration-preserving preprocessing and parsing with an implementation for C (PLDI 2012).

GraphicML I designed an intermediate language for data graphics and built a translation tool to generate charts as vector graphics (ETS 2000-2008).

NAEP Questions Tool I was the lead developer and version 2 architect (ETS 2000-2008).

Teaching and Advising Experience

- Fall 2018 Instructor, COP-3402 Systems Software, University of Central Florida
- AY 2017-18 Security Advisor, Senior Project, Stevens Institute of Technology
- Spr 2015 Recitation Leader, Data Structures, New York University
- Fall 2014 Recitation Leader, Data Structures, New York University
- 2009-2012 Teacher, cSplash one-day festival of Math and CS, New York University, NY
- Spr 2010 Teaching Assistant, Compilers, New York University
- Spr 2010 Teaching Assistant, Operating Systems, New York University
- Fall 2009 Teaching Assistant, Computer Organization, New York University

Professional Service

- 2018 Program Committee, Systems and Software Product Line Conference, Challenge Track (SPLC-C 2018)
- 2018 Artifact Evaluation Committee, Object-Oriented Programming, Systems, Languages & Applications (OOPSLA 2018)
- 2018 Reviewer, European Software Engineering Conference and Foundations of Software Engineering (ESEC/FSE 2018)
- 2017 Reviewer, Symposium on Security and Privacy (IEEE S&P 2018)
- 2017 Artifact Evaluation Committee, Principles of Programming Languages (POPL 2018 AEC)
- 2017 Reviewer, Principles and Practice of Parallel Programming (PPoPP 2018)
- 2017 Journal Reviewer, Science of Computer Programming
- 2017 Proposal Reviewer, Netherlands Organisation for Scientific Research (NWO)
- 2017 Shadow Program Committee Member, ACM European Conference on Computer Systems (EuroSys 2017)
- 2016 Journal Reviewer, ACM Transactions on Parallel Computing (TOPC)
- 2016 Reviewer, European Conference on Object-Oriented Programming (ECOOP 2017)

Community Activities

- 2017 Panel Member, MSCS & MSIS Alumni Q&A Panel, New York University
- 2015 Panel Member, MSCS & MSIS Alumni Q&A Panel, New York University
- 2013 PhD Student Representative, Computer Science Department, New York University
- 2009-2012 Teacher, cSplash one-day festival of Math and CS, New York University
- 2009-2010 Volunteer, Women in Computing's High School Girls' CS/Engineering Colloquium
- 2010 President, NYU Master's Association of Computer Science
- 2009 Treasurer, NYU Master's Association of Computer Science
- 2009 Department Representative, NYU Graduate School Open House

— **Professional Memberships** —

- 2009-Present Professional Member, Association for Computing Machinery
- 2014-Present Associate Member, Free Software Foundation
- 2014-Present Contributing Member, Electronic Frontier Foundation

References

Michael Hicks
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Eric Koskinen
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Thomas Wies
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