

Justin Smith

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EDUCATION	North Carolina State University , Raleigh, NC PhD Candidate in Computer Science <i>Dissertation: Supporting Effective Strategies for Resolving Vulnerabilities Reported by Static Analysis Tools</i> MS in Computer Science Dean's Merit Award, GPA – 4.0	2014–Present 2014–2016
	Hamilton College , Clinton, NY Bachelor of Arts with Honors in Computer Science and Mathematics Magna Cum Laude, Elihu Root Fellow	2010–2014
RESEARCH EXPERIENCE	Microsoft Research , Redmond, WA Advisor: Ben Zorn <i>Research Intern</i> Developed machine learning models for Microsoft Excel spreadsheets. Curated large datasets for training, testing, and validation.	2018
	ABB Corporate Research , Raleigh, NC Advisor: Nicholas Kraft <i>Research Intern</i> Investigated the practical challenges facing end-user programmers at ABB resulting in publication [C8]. Surveyed and interviewed spreadsheet users. Designed and prototyped tool interventions.	2016
	Hamilton College Dept. of Computer Science , Clinton, NY Advisor: Mark Bailey <i>Honors Thesis Research</i> Designed and implemented a statically-typed shell scripting language	2014
	Hamilton College Dept. of Computer Science , Clinton, NY <i>Undergraduate Research Assistant</i> Developed framework for capturing programming sessions in Emacs	2012
JOURNAL PAPERS	[J1] How Developers Diagnose Potential Security Vulnerabilities with a Static Analysis Tool <u>Justin Smith</u> , Brittany Johnson, Emerson Murphy-Hill, Bill Chu, Heather Lipford <i>Transactions on Software Engineering (TSE 2018)</i>	
CONFERENCE PAPERS	[C10] Does ACM's Code of Ethics Change Ethical Decision Making in Software Development? Andrew McNamara, <u>Justin Smith</u> , Emerson Murphy-Hill <i>International Conference on the Foundations of Software Engineering (FSE 2018)</i> New Ideas and Emerging Results Track <i>Acceptance rate: 20% (12/59)</i>	
	[C9] Flower: Navigating Program Flow in the IDE <u>Justin Smith</u> , Chris Brown, Emerson Murphy-Hill <i>Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2017)</i> <i>Acceptance rate: 33% (Short papers)</i>	

[C8] Spreadsheet Practices and Challenges in a Large Multinational Conglomerate

Justin Smith, Justin A. Middleton, Nicholas A. Kraft

Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2017)

Acceptance rate: 29%

[C7] Just-in-Time Static Analysis

Lisa Nguyen, Karim Ali, Ben Livshits, Eric Bodden, Justin Smith, Emerson Murphy-Hill

International Symposium on Software Testing and Analysis (ISSTA 2017)

Acceptance rate: 26% (31/118)

ACM SIGSOFT Distinguished Paper Award

[C6] Do Developers Pay Attention to Error Messages?

Titus Barik, Justin Smith, Kevin Lubick, Elisabeth Holmes, Jing Feng, Emerson Murphy-Hill, Chris Parnin

International Conference on Software Engineering (ICSE 2016)

Acceptance rate: 19% (101/530)

[C5] Paradise Unplugged: Identifying Barriers for Female Participation on Stack Overflow

Denae Ford, Justin Smith, Philip Guo, Chris Parnin

International Conference on the Foundations of Software Engineering (FSE 2016)

Acceptance rate: 27% (74/273)

[C4] A Cross-Tool Study on Program Analysis Tool Notifications

Brittany Johnson, Rahul Pandita, Justin Smith, Denae Ford, Sarah Elder, Emerson Murphy-Hill, Sarah Heckman, Caitlin Sadowski

International Conference on the Foundations of Software Engineering (FSE 2016)

Acceptance rate: 27% (74/273)

[C3] A Study of Interactive Code Annotation for Access Control Vulnerabilities

Tyler Thomas, Justin Smith, Emerson Murphy-Hill, Bill Chu, Heather Lipford

Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2015)

Acceptance rate: 30% (Short papers)

[C2] Questions Developers Ask While Diagnosing Potential Security Vulnerabilities With Static Analysis

Justin Smith, Brittany Johnson, Emerson Murphy-Hill, Bill Chu, Heather Lipford

International Conference on the Foundations of Software Engineering (FSE 2015)

Acceptance rate: 25% (74/291)

[C1] Fuse: A Reproducible, Extendable, Internet-scale Corpus of Spreadsheets

Titus Barik, Kevin Lubick, Justin Smith, John Slankas, Emerson Murphy-Hill

Working Conference on Mining Software Repositories (Data Showcase) (MSR 2015)

WORKSHOP
PAPERS

[W1] What Questions Remain? An Examination of How Developers Understand an Interactive Static Analysis Tool

Tyler Thomas, Justin Smith, Heather Lipford, Bill Chu, Emerson Murphy-Hill

Workshop on Security Information Workers at SOUPS (2016)

TALKS AND
POSTERS

Supporting Effective Strategies for Resolving Vulnerabilities Reported by Static Analysis Tools

Symposium on Visual Languages and Human-Centric Computing GC (VL/HCC 2018)

Cheetah: Just-in-Time Taint Analysis for Android Apps
International Conference on Software Engineering Tool Demo (ICSE 2017)

Resolving Input Validation Vulnerabilities by Retracing Taint Flow Through Source Code

International Conference on Software Maintenance and Evolution DS (ICSME 2016)
Symposium on Visual Languages and Human-Centric Computing GC (VL/HCC 2016)

Perquimans: A Tool for Visualizing Patterns of Spreadsheet Function Combinations
Working Conference on Software Visualization (VISSOFT 2016)

Identifying Successful Strategies for Resolving Static Analysis Notifications

International Conference on Software Engineering (ICSE 2016)
2nd place ACM Student Research Competition

Improving Quality and Reducing Regression via Automated Testing for Emptoris Strategic Supply Management

IBM Internship Presentations Littleton, MA (2015)

Statically Typed Shell Scripting

Hamilton College Department of Computer Science Honors Defense Clinton, NY (2014)

Determining Set of the n-Cube

Hamilton College Department of Mathematics Honors Defense Clinton, NY (2014)

Capture, Analysis, and Visualization of Programming Sessions *Consortium for Computing Sciences in Colleges—Northeastern Region (CCSCNE 2013)*

Undergraduate Posters

WORK
EXPERIENCE

IBM Emptoris, Littleton, MA 2015
Software Engineering Intern

Automated SOAP web service tests for the Emptoris Virtual Supply Master application. Integrated automated tests into the build system. Team adopted and expanded my framework, automating all web service tests.

Digitell, Jamestown, NY 2013
Web Development Intern

Created custom web application for scheduling internal events

TEACHING
AND ADVISING
EXPERIENCE

North Carolina State University, Raleigh, NC 2017
Instructor, Discrete Mathematics CSC 226

Guest Lecturer, Software Engineering as a Human Activity CSC 710 2017
Study Methods: Interviews and Surveys

Roberts Park Code Camp, Raleigh, NC 2016–2018
Instructor

Week-long coding camp, engaging 40 teens

North Carolina State University Senior Design Center 2018
Project Mentor, PDF Review Tool Team

	INTech Code Camp, Raleigh, NC <i>Tech Mentor</i> Week-long code camp for middle school girls	2017
	Science of Software REU Site, Raleigh, NC <i>Mentor</i> Nadeen Saleh, Florida Atlantic University Anthony Benavente, Western Carolina University	2016
	Wake STEM Early College High School, Raleigh, NC <i>Tutor, Computer Programming I</i>	2016
	Corinth Holders High School, Wendell, NC <i>Mentor, Advanced Placement (AP) Computer Science</i>	2015
	Hamilton College Dept. of Computer Science, Clinton, NY <i>Rusty Smith Memorial Head Teaching Assistant</i> Hired and supervised team of 25 teaching assistants	2013–2014
PROFESSIONAL ACTIVITIES	Program Committee Member and Reviewer 2018: Transactions in Software Engineering 2018: European Conference on Object-Oriented Programming Doctoral Symposium 2017: Symposium On Usable Privacy and Security 2016-17: Object-Oriented Programming, Systems, Languages & Applications Artifacts	
	Conference Organizer Symposium on Visual Languages and Human Centric Computing 2019: Proceedings Chair 2018: Social Media Chair 2017: Food Chair European Software Engineering Conference and Symposium on the Foundations of Software Engineering 2018: Social Media Chair	
	Student Volunteer 2017: Symposium on Visual Languages and Human Centric Computing 2016: International Working Conference on Source Code Analysis and Manipulation 2016: International Conference on Software Maintenance and Evolution 2016: International Conference on Software Engineering 2015: Foundations of Software Engineering	
	North Carolina State University, Raleigh, NC Department of Computer Science PhD Recruiting Ambassador	2016
	Hamilton College Programming Team, Clinton, NY Captain, Intercollegiate ACM programming competitions	2013
	Chautauqua Lake Central School, Mayville, NY 5 th Grade Science Fair Grand Champion – “Bob the Body”	2003
PRESS	<u>We Need To Work Harder To Make Software Engineering More Ethical</u> Jessica Baron, Forbes	October, 2018

<u>Establishing an AI code of ethics will be harder than people think</u> Karen Hao, MIT Technology Review	October, 2018
<u>Code of ethics doesn't influence decisions of software developers</u> Reddit /r/programming front page	October, 2018
<u>Researchers tackle issues surrounding security tools for software developers</u> Matt Shipman, Phys.org	August, 2015

LANGUAGES Java – Professional Experience & Graduate Coursework
 PHP, Javascript, C# – Professional Experience
 C++ – Graduate Coursework
 Python – Teaching Experience

PROFESSIONAL MEMBERSHIPS Association of Computer Machinery (ACM)
 ACM Special Interest Group on Software Engineering (SIGSOFT)
 Institute of Electrical and Electronics Engineers (IEEE)
 Sigma Xi Scientific Research Society
 Phi Kappa Phi Honor Society (Invited 2016)