

Jonathan Bell

CONTACT INFORMATION	<p>Khoury College of Computer Sciences Northeastern University 360 Huntington Ave Boston, MA 02115 MA</p>	<p><i>E-mail:</i> j.bell@northeastern.edu <i>WWW:</i> jonbell.net</p>
RESEARCH INTERESTS	Software engineering: software quality, reliability and security, software testing, fault reproduction and privacy, program analysis, software systems, mobile computing	
EDUCATION	<p>Columbia University, New York, NY USA Ph.D., Computer Science, 2016</p> <ul style="list-style-type: none">• Advisor: Professor Gail Kaiser• Area of Study: Software Engineering and Software Systems• Thesis Topic: <i>Making Software More Reliable by Uncovering Hidden Dependencies</i> <p>M.Phil., Computer Science, 2014 M.S., Computer Science, 2011 B.S., Computer Science, 2010, <i>Cum Laude</i></p>	
AWARDS AND HONORS	<p>Dahl-Nygaard Junior Prize An international prize given annually to an early career researcher who has made a significant technical contribution to object-oriented programming. 2020.</p> <p>George Mason University Teacher of Distinction University-wide award in recognition of course planning and preparation, curriculum development, innovative teaching, advising, and undergraduate and graduate mentoring. 2020.</p> <p>NSF CAREER Award National Science Foundation Faculty Early Career Development Award. 2019.</p> <p>Distinguished Paper Awards Awarded to the top papers at a conference. Received at ICPC 2016 and ICSE 2014.</p> <p>Distinguished Reviewer Awards Awarded to the top reviewers on a program conference committee. Received at ICSE 2022, ICSE 2021, ICSE 2020 and ASE 2018.</p>	
PUBLICATIONS	<p>Journals</p> <ol style="list-style-type: none">1. Hough, K. and Bell, J. A Practical Approach for Dynamic Taint Tracking with Control-flow Relationships. In: <i>ACM Transactions on Software Engineering and Methodology</i> 31(2) (2021). ISSN: 1049-331X. DOI: 10 . 1145 / 3485464. https://jonbell.net/publications/conflux.2. Lam, W., S. Winter, A. Wei, T. Xie, D. Marinov, and J. Bell. A Large-Scale Longitudinal Study of Flaky Tests. In: <i>Proceedings of the ACM on Programming Languages</i>. Vol. 3. OOPSLA. Acceptance rate: 36%. Association for Computing Machinery, 2020. https://jonbell.net/publications/oopsla20flaky.3. Bell, Jonathan, C. Murphy, and G. Kaiser. Metamorphic Runtime Checking of Applications Without Test Oracles. In: <i>CrossTalk, the Journal of Defense Software Engineering</i>. Vol. March. 2015. https://jonbell.net/publications/columbus. <p>Conferences</p> <ol style="list-style-type: none">1. Kukucka, J., L. Pina, P. Ammann, and Bell, J. CONFETTI: Amplifying Concolic Guidance for Fuzzers. In: <i>Proceedings of the 2022 International Conference on Software Engineering</i>. ICSE. Acceptance rate: 26%. 2022. https://jonbell.net/publications/confetti.2. Perretta, J., A. DeOrio, A. Guha, and Bell, J. On the Use of Mutation Analysis for Evaluating Student Test Suite Quality. In: <i>Proceedings of the 31st ACM SIGSOFT International Symposium on Software Testing and Analysis</i>. ISSTA. Acceptance rate: 27%. 2022. https://jonbell.net/publications/issta22mutants.	

3. Alshammari, A., C. Morris, M. Hilton, and **Bell, J.** FlakeFlagger: Predicting Flakiness Without Rerunning Tests. In: *Proceedings of the 2021 International Conference on Software Engineering*. ICSE. Acceptance rate: 24%. 2021. <https://jonbell.net/publications/flakeflagger>.
4. Celik, A., P. Nie, M. Coley, A. Milicevic, **J. Bell**, and M. Gligoric. Experience Report: Debugging the Performance of Maven's Test Isolation. In: *Proceedings of the 2020 International Symposium on Software Testing and Analysis*. ISSTA. Acceptance rate: 26%. 2020. <https://jonbell.net/publications/maven-surefire>.
5. Hough, K., G. Welearegai, C. Hammer, and **J. Bell**. Revealing Injection Vulnerabilities by Leveraging Existing Tests. In: *Proceedings of the 2020 International Conference on Software Engineering*. ICSE. Acceptance rate: 21%. 2020. <https://jonbell.net/publications/rivulet>.
6. Shi, A., **J. Bell**, and D. Marinov. Mitigating the Effects of Flaky Tests on Mutation Testing. In: *Proceedings of the 2019 ACM SIGSOFT International Symposium on Software Testing and Analysis*. ISSTA 2019. Acceptance rate: 22%. 2019. <https://jonbell.net/publications/flakymutants>.
7. Arora, N., **Bell, Jonathan**, F. Ivancic, G. Kaiser, and B. Ray. Replay without Recording of Production Bugs for Service Oriented Applications. In: *33rd IEEE/ACM International Conference on Automated Software Engineering*. ASE 2018. Acceptance rate: 20%. 2018. <https://jonbell.net/publications/parikshan>.
8. Gambi, A., **J. Bell**, and A. Zeller. Practical Test Dependency Detection. In: *Proceedings of the 2018 IEEE Conference on Software Testing, Validation and Verification*. ICST 2018. Acceptance rate: 25%. 2018. <https://jonbell.net/publications/pradet>.
9. Hilton, M., **Bell, Jonathan**, and D. Marinov. A Large-Scale, Longitudinal Study of Test Coverage Evolution. In: *33rd IEEE/ACM International Conference on Automated Software Engineering*. ASE 2018. Acceptance rate: 20%. 2018. <https://jonbell.net/publications/coverage>.
10. **J. Bell**, O. Legunsen, M. Hilton, L. Eloussi, T. Yung, and D. Marinov. DeFlaker: Automatically Detecting Flaky Tests. In: *Proceedings of the 2018 International Conference on Software Engineering*. ICSE 2018. Acceptance rate: 21%. 2018. <https://jonbell.net/publications/deflaker>.
11. **J. Bell** and L. Pina. CROCHET: Checkpoint and Rollback via Lightweight Heap Traversal on Stock JVMs. In: *Proceedings of the 2018 European Conference on Object-Oriented Programming*. ECOOP 2018. Acceptance rate: 39%. 2018. <https://jonbell.net/publications/crochet>.
12. Su, F.-H., **J. Bell**, K. Harvey, G. Kaiser, S. Sethumadhavan, and T. Jebara. Code Relatives: Detecting Similarly Behaving Software. In: *Proceedings of the 2016 ACM SIGSOFT International Symposium on the Foundations of Software Engineering*. FSE 2016. Acceptance rate: 30%. 2016. <https://jonbell.net/publications/dyclink>.
13. Su, F.-H., **J. Bell**, G. Kaiser, and S. Sethumadhavan. Identifying Functionally Similar Code in Complex Codebases. In: *Proceedings of the 24th IEEE International Conference on Program Comprehension*. ICPC 2016. Acceptance rate: 30%. **Distinguished Paper Award**. 2016. <https://jonbell.net/publications/hitoshiio>.
14. **Bell, Jonathan**, G. Kaiser, E. Melski, and M. Dattatreya. Efficient Dependency Detection for Safe Java Test Acceleration. In: *Proceedings of the 10th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering*. ESEC/FSE 2015. Acceptance rate: 25%. 2015. <https://jonbell.net/publications/electrictest>.
15. **Bell, Jonathan**, E. Melski, M. Dattatreya, and G. Kaiser. Vroom: Faster Build Processes for Java. In: *IEEE Software*. Vol. Special Issue: Release Engineering, March/April 2015. IEEE Computer Society, 2015.
16. Viennot, N., M. Lecuyer, **Bell, Jonathan**, R. Geambasu, and J. Nieh. Synapse: A Microservices Architecture for Heterogeneous-Database Web Applications. In:

- Proceedings of The 2015 European Conference on Computer Systems (EuroSys)*. Acceptance rate: 21%. 2015. <https://jonbell.net/publications/synapse>.
17. Spahn, R., **J. Bell**, M. Lee, S. Bhamidipati, R. Geambasu, and G. Kaiser. Pebbles: Fine-Grained Data Management Abstractions for Modern Operating Systems. In: *Proceedings of the 11th USENIX Symposium on Operating Systems Design and Implementation*. OSDI 2014. Acceptance rate: 18.4%. 2014. <https://jonbell.net/publications/pebbles>.
 18. **Bell, Jonathan** and G. Kaiser. Phosphor: Illuminating Dynamic Data Flow in Off-The Shelf JVMs. In: *Proceeding of the 29th ACM SIGPLAN Conference on Object Oriented Programming Systems Languages and Applications*. OOPSLA 2014. Acceptance rate: 28%. Artifact accepted as meeting reviewer expectations. 2014. <https://jonbell.net/publications/phosphor>.
 19. **Bell, Jonathan** and G. Kaiser. Unit Test Virtualization with VMVM. In: *Proceedings of the 2014 International Conference on Software Engineering*. ICSE 2014. Acceptance rate: 20%. **ACM SIGSOFT Distinguished Paper Award**. 2014. <https://jonbell.net/publications/vmvm>.
 20. **Bell, Jonathan**, N. Sarda, and G. Kaiser. Chronicler: Lightweight Recording to Reproduce Field Failures. In: *Proceedings of the 2013 International Conference on Software Engineering*. ICSE 2013. Acceptance rate: 18.5%. 2013. <https://jonbell.net/publications/chronicler>.

CS Education

1. Sheth, S., **Bell, Jonathan**, and G. Kaiser. A Competitive-Collaborative Approach for Introducing Software Engineering in a CS2 Class. In: *Proceedings of the 2013 Conference on Software Engineering Education and Training*. CSEET 2013. 2013. <https://jonbell.net/publications/cseet2013>.
2. **Bell, Jonathan**, S. Sheth, and G. Kaiser. Secret ninja testing with HALO software engineering. In: *Proceedings of the 4th international workshop on Social software engineering*. SSE '11. 2011. <https://jonbell.net/publications/halo-sse>.
3. Sheth, S., **Bell, Jonathan**, and G. Kaiser. HALO (Highly Addictive, socialLy Optimized) Software Engineering. In: *Proceeding of the 1st international workshop on Games and software engineering*. GAS '11. 2011. <https://jonbell.net/publications/halo>.

Other Short Papers

1. Su, F.-H., **J. Bell**, G. Kaiser, and B. Ray. Obfuscation Resilient Search through Executable Classification. In: *Proceedings of the 2nd ACM SIGPLAN International Workshop on Machine Learning and Programming Languages*. MAPL 2018. 2018. <https://jonbell.net/publications/macneto>.
2. **Bell, Jonathan**, T. D. LaToza, F. Baldmitsi, and A. Stavrou. Advancing Open Science with Version Control and Blockchains. In: *Proceedings of the 12th International Workshop on Software Engineering for Science*. SE4Science 2017. 2017. <https://jonbell.net/publications/se4science>.
3. Su, F.-H., **J. Bell**, and G. Kaiser. Challenges in Behavioral Code Clone Detection. In: *Proceedings of the 10th International Workshop on Software Clones*. IWSC 2016. 2016. <https://jonbell.net/publications/iwsc16>.
4. Su, F.-H., **Bell, Jonathan**, C. Murphy, and G. Kaiser. Dynamic Inference of Likely Metamorphic Properties to Support Differential Testing. In: *Proceedings of the 10th International Workshop on Automation of Software Test*. AST 2015. 2015. <https://jonbell.net/publications/mt-inference>.
5. **Bell, Jonathan** and G. Kaiser. Dynamic Taint Tracking for Java with Phosphor (Demo). In: *Proceedings of the 2015 International Symposium on Software Testing and Analysis*. ISSTA 2015. 2015. <https://jonbell.net/publications/phosphor-demo>.
6. **Bell, Jonathan**. Detecting, Isolating and Enforcing Dependencies Between and Within Test Cases. In: *Proceedings of the 22nd ACM SIGSOFT International Symposium on Foundations of Software Engineering Doctoral Symposium*. SIGSOFT/FSE 2014. 2014. <https://jonbell.net/publications/fse-docsym>.

7. **Bell, Jonathan** and G. Kaiser. VMVM: Unit Test Virtualization for Java (Formal Tool Demonstration). In: *Proceedings of the 2014 International Conference on Software Engineering*. ICSE 2014. Acceptance rate: 36%. 2014. <https://jonbell.net/publications/vmvm-demo>.
8. **Bell, Jonathan**, S. Sheth, and G. Kaiser. A Large-Scale, Longitudinal Study of User Profiles in World of Warcraft. In: *Proceedings of the 5th international workshop on web intelligence and communities*. WiC '13. 2013. <https://jonbell.net/publications/wow>.

RESEARCH
GRANTS

Total: 6 grants, \$1,209,799 as my share

1. "Collaborative Research: RAPID: Virtual Conference Platform," PI: Jonathan Bell, also non-GMU PIs Crista Lopes (UC Irvine) and Benjamin Pierce (Penn). *National Science Foundation* CCF-2035003, \$159,986, GMU Portion: \$30,208, to rapidly develop software to support virtual conferences in response to COVID-19. 7/20-5/21.
2. "NSF Student Travel Grant for 2019 ACM SIGPLAN Conference on Systems, Programming, Languages and Applications: Software for Humanity (SPLASH)," PI: Jonathan Bell. *National Science Foundation* CCF-1940760, \$30,000 to support undergraduate student attendance at the PL/SE mentoring workshop. 8/19-1/20.
3. "CAREER: Amplifying Developer-Written Tests for Code Injection Vulnerability Detection," PI: Jonathan Bell. *National Science Foundation* CNS-2100015, \$500,000. 5/19-4/24.
4. "Enabling Testing and Dynamic Analysis Research at a Very Large Scale," PI: Jonathan Bell. *Amazon Web Services*, \$8,000 to support cloud infrastructure, 12/18.
5. "SHF: Medium: Collaborative Research: Enhancing Continuous Integration Testing for the Open-Source Ecosystem," PI: Jonathan Bell, also non-GMU PIs Darko Marinov (UIUC) and Lingming Zhang (UT Dallas). *National Science Foundation* CCF-2100037, \$1.2 million, My share: \$399,591. 10/18-9/22.
6. "NSF Student Travel Grant for 2018 ACM SIGPLAN Conference on Systems, Programming, Languages and Applications: Software for Humanity (SPLASH)," PI: Jonathan Bell. *National Science Foundation* CCF-1838986, \$30,000 to support undergraduate student attendance at the PL/SE mentoring workshop. 8/18-1/19.
7. "Science of Security Principles of Trustworthy Systems Design, Modeling and Analysis for Security and Privacy," PI: Jonathan Bell. *National Security Agency*, subcontract from *Carnegie Mellon University*, \$250,000. 5/18-5/23.

INVITED TALKS

- "Learning to Live with Flaky Tests," Adyen Tech Talk, April 2022.
- "Catching more bugs with fewer false alarms," SPLASH keynote address upon acceptance of Dahl-Nygaard Junior Prize at ECOOP, November 2020.
- "Catching more bugs with fewer false alarms," Carnegie Mellon University, March 2020.
- "DeFlaker: Automatically Detecting Flaky Tests," Google Journal Club Paper Series, April 2018.
- "Detecting and Debugging Flaky Tests," Swedish Association for Software Testing Quarterly Meeting, April 2018.
- "Practical Dynamic Data Flow Analysis in the JVM," University of Maryland, May 2017.
- "Practical Dynamic Data Flow Analysis in the JVM," Virginia Tech Arlington Campus, March 2017.
- "Making Software More Reliable by Uncovering Hidden Dependencies," University of Washington, November 2016.
- "Making Software More Reliable by Uncovering Hidden Dependencies," University of Delaware, September 2016.
- "Making Software More Reliable by Uncovering Hidden Dependencies," IBM TJ Watson, January 2016.

“Faster, More Reliable Builds,” University of Illinois at Urbana-Champaign, December 2015.

“Practical Dynamic Taint Tracking in the JVM,” University of Illinois at Urbana-Champaign, December 2015.

“Practical Dynamic Taint Tracking in the JVM,” IBM Programming Languages Day, November 2015.

TEACHING

Northeastern University, Boston, MA USA

“Instructor” refers to student evaluation question: “What is your overall rating of this instructor’s teaching effectiveness?;” “avg” refers to the overall department average that semester.

- Fall 2022: Undergrad: “Fundamentals of Software Engineering.”
- Spring 2022: Undergrad: “Fundamentals of Software Engineering.”
Instructor: 4.7/5.0 (avg. 4.3). <https://neu-se.github.io/CS4530-Spring-2022/>
- Fall 2021: Grad: “Special Topics in Software Engineering.”
Instructor: 5.0/5.0 (avg. 4.4). <https://neu-se.github.io/CS7580-Fall-2021/>
- Spring 2021: Undergrad: “Fundamentals of Software Engineering.”
Instructor: 4.6/5.0 (avg 4.3). <https://neu-se.github.io/CS4530-CS5500-Spring-2021/>
- Fall 2020: Undergrad/MS: “Fundamentals of Software Engineering.”
Instructor: 4.6/5.0 (avg. 4.4). <https://pages.github.ccs.neu.edu/CS5500-CourseMaterials/CS4530-CS5500-Fall12020/>

George Mason University, Fairfax, VA USA

“Q15” refers to student evaluation question 15, “My overall rating of the teaching;” “Q16” refers to student evaluation question 16 “My overall rating of this course;” “avg” refers to the overall department average that semester.

- Fall 2019: Undergrad: “Distributed and Concurrent Systems.” Q15: 4.78/5 (avg 4.25), Q16: 4.47/5 (avg. 4.06). <https://www.jonbell.net/gmu-cs-475-fall-2019/>.
- Spring 2019: Undergrad: “Distributed and Concurrent Systems.” Q15: 4.88/5 (avg. 4.32), Q16: 4.69/5 (avg. 4.07). <http://www.jonbell.net/gmu-cs-475-spring-2019/>.
- Fall 2018: Undergrad: “Web App Development.” Q15: 4.75/5 (avg. 4.29), Q16: 4.67/5 (avg. 4.10). <https://www.jonbell.net/swe-432-fall-2018-web-programming/>.
- Spring 2018: Undergrad: “Distributed and Concurrent Systems.” Q15: 5.00/5 (avg. 4.32), Q16: 4.56/5 (avg. 4.12). <http://www.jonbell.net/gmu-cs-475-spring-2018/>
- Fall 2017: Grad: “Program Analysis for Software Testing.” <http://www.jonbell.net/swe-795-fall-17-program-analysis-for-software-testing/> (Small seminars do not receive course evaluations)
- Spring 2017: Grad: “Distributed Software Engineering.” Q15: 4.38/5 (avg 4.21), Q16: 4.13/5 (avg 4.05). <http://www.jonbell.net/swe-622-spring-2017/>
- Fall 2016: Undergrad: “Design and Implementation of Software for the Web.” Q15: 4.71/5 (avg 4.23), Q16: 4.52/5 (avg 4.08). <http://www.jonbell.net/swe-432-fall-2016/>

PROFESSIONAL
AND RESEARCH
EXPERIENCE

Northeastern University, Boston, MA USA

Assistant Professor, Khoury College of Computer Sciences

2020 — Present

Clowdr Cic, Bristol, United Kingdom

Co-Founder, Non-Executive Director of the Board

2020 — Present

George Mason University, Fairfax, VA USA

Assistant Professor, Department of Computer Science

2016 — 2020

Electric Cloud, Inc, San Jose, CA USA

Consulting Research Scientist

Summer 2014

Programming Systems Laboratory, Columbia University, New York, NY USA

Graduate Research Assistant

2011 — 2016

Conference/Professional Organization Activities

ACM SIGSOFT-wide Open Science Initiative Co-Chair 2019 - Present
 Artifact Evaluation PC Co-Chair at PLDI 2020
 Student Mentoring Workshop Co-Chair at ICSE 2022
 Student Mentoring Workshop Co-Chair at SPLASH 2017, 2018, 2019, 2020
 Student Research Competition Judge at ICSE 2019, 2020
 Student Volunteer Co-Chair at SPLASH 2013, 2014, 2015
 Posters Co-Chair at SPLASH 2017
 Publicity Co-Chair at ISSTA 2020
 Publicity Co-Chair at SPLASH 2018
 Virtualization Chair at ISSTA 2020
 Virtualization Technology Co-Chair at ICSE 2020
 Workshop Co-Organizer: Designing and Running Project-Based Courses in Software Engineering Education at ICSE 2022
 Workshop Co-Organizer: Games and Software Engineering at ICSE 2012

Conference Technical Program Committee Membership

Automated Software Engineering (ASE) 2018, 2019, 2020, 2021, 2022
 Foundations of Software Engineering (ESEC/FSE) 2022
 IEEE Secure Development Conference 2021
 International Conference on Mining Software Repositories (MSR) 2020
 International Conference on Software Engineering (ICSE) 2019, 2020, 2021, 2022
 International Conference on Software Testing (ICST) 2019
 International Symposium on Software Testing and Analysis (ISSTA) 2021, 2022

Journal Reviewing

Automated Software Engineering (2021)
 Empirical Software Engineering (2016, 2017, 2018, 2019, 2020, 2021)
 Journal of Systems and Software (2016, 2017, 2019, 2020, 2021, 2022)
 IEEE Software (2017)
 Transactions on Software Engineering and Methodology — ACM (2020, 2021, 2022)
 Transactions on Software Engineering — IEEE (2020, 2021, 2022)
 Transactions on Reliability — IEEE (2020)

Other Program Committee Memberships

Artifact Evaluation Committee Member at ISCME 2017
 Artifact Evaluation Committee Member at ISSTA 2015
 Artifact Evaluation Committee Member at OOPSLA 2015, 2016
 Doctoral Symposium PC at ISSTA 2022
 Late Breaking Ideas Track at ICSME 2019
 Mining Challenge Track at MSR 2017, 2018, 2020
 New Ideas and Emerging Results at ICSE 2023
 Release Engineering Workshop co-located with FSE 2016
 Testing Tools Track at ICST 2016, 2020
 Tool Demonstrations Track at ISSTA 2021, 2022
 Workshops Program Committee Member at ICSE 2023

Other Review Panels

CRA-E Undergraduate Research Award Committee 2020, 2021
 Department of Energy 2021
 National Science Foundation 2017 (x2), 2018, 2019, 2020 (x3), 2022

Northeastern University, Khoury College Committees

Code4Community Student Group, Faculty Advisor 2021-Present
 Faculty Engagement and Mentoring 2021-22

George Mason University CS Department Committees

Computing 2016-20

PhD Recruitment and Evaluation 2017-20

Masters in Software Engineering Program Admissions 2016-20

Student Run Computing + Technology Group Faculty Advisor 2018-20

Tenure Track Recruitment 2018-20

Teaching Track Recruitment 2017-19

THESIS
COMMITTEES

Committee Member:

Aviral Goel, Northeastern PhD CS, advisor Jan Vitek, "Non-intrusive migration of R ecosystem from lazy to strict semantics"

Thomas Lemberger, LMU Munich PhD CS, advisor Dirk Beyer

Daniel Gaston, University of Delaware PhD CS, advisor James Clause, "Leveraging Similar Functionality to Find Missing Tests"

Gabriel Ferreira, CMU PhD CS, advisor Christian Käestner, "Towards Practical and Trustworthy Package Management"

Kesina Baral, GMU PhD IT, advisor Jeff Offutt, "Tools and Techniques to Support Developer Testing"

Sahar Mehrpour, GMU PhD CS, advisor Thomas LaToza, "Helping Developers Follow Design Decisions"

Abdulaziz Alaboudi, GMU PhD IT, advisor Thomas LaToza, "Supporting Developers Through Hypotheses-based Debugging Tools"

Chong Tang, UVA PhD CS, advisors Kevin Sullivan and Baishakhi Ray, "Improving System Performance via Design and Configuration Space Exploration."

David Gonzalez, GMU PhD IT, advisor Thomas LaToza, "Direct Manipulation of Code through Idiomatic Views"

Fernando Boccanera, GMU PhD IT, advisor Alex Brodsky, "Decision Guidance on Software Feature Selection to Maximize the Benefit to Organizational Processes."

MENTORING &
ADVISING

At Northeastern:

Amanda Dupell (BS), "Accessibility Considerations and Testing for Virtual Conference Design", Spring 2022.

Ian McLaughlin (BS), "Performance Measurement of Cloud Container Services for Streaming Video," Fall 2021.

James Perretta (PhD), Co-advised with Arjun Guha, "Evaluating Test Suite Quality," 2021-Present.

Katherine Hough (PhD), "Dynamic Analysis and Fuzz Testing," 2020-Present.

At George Mason:

James Kukucka (PhD), "Fuzzing stateful applications in the JVM," Spring 2019-Present

Abdulrahman Alshammari (PhD), "Proactive Detection of Flaky Tests," Spring 2019-Present

Aaron Massey (UG/MS), "Diagnosing and Reproducing Flaky Tests," Spring 2019-2021.

Katherine Hough (UG/MS), "Amplifying Developer-Provided Tests to Detect Injection Vulnerabilities," 2019-2020. (Transitioned to PhD at Northeastern)

Matthew Coley (UG), "Improving Maven's Flaky Test Detection," Summer 2019.

Sarah Alhozaimy (PhD), "Quantifying and Visualizing Changes in Code Coverage," Fall 2018-2019.

Hayder Al Haddad (BS), "Detecting and Visualizing Changes in Code Coverage," Summer

2018.

Luís Pina (Postdoctoral Scholar), “JVM Systems for Intrusion Detection and Vulnerability Detection,” Fall 2017-Summer 2019. Now: Assistant Professor at University of Illinois (Chicago).

Okhaifo Oikeh (MS), “Exploiting Dynamic Dataflow Information to Improve Software Testing,” Fall 2017-Fall 2018.

Jeffrey Currence (BS), with Thomas LaToza, “Mining API invocations in JavaScript,” Summer 2017.

Monica Jeyasankar (BS), “Detecting Code Relatives in JavaScript,” Spring 2017.

Shravya Kalva (BS), “Detecting Code Relatives in JavaScript,” Spring 2017.

Pakeezha Arfany (BS), “Detecting Code Relatives in JavaScript,” Spring 2017.

At Columbia:

Mandi Wang (MS), “Extending Test Suite Minimization,” Fall 2014, Spring 2015.

Emilia Pakulski (BS), “Automating Test Suite Minimization,” Fall 2014.

Alana Ramjit (BS), “Optimizing Scala Test Suites,” Fall 2014.

Jennifer Lam (BS), “Analyzing Regression Testing Practices in OSS,” Spring 2014.

Xingzhou Derek He (BS), “Symbolic String Analysis for Java,” Spring 2014, Fall 2014, Spring 2015.

Sidharth Shanker (BS), “Comparing test suite minimization techniques,” Fall 2013.

Winnie Narang (MS), “Reproducing Java application field-failures with limited user information,” Fall 2013.

Nikhil Sarda (MS), “Creating an efficient and robust Java *in-vivo* testing framework,” Summer 2012.

Miriam Melnick (BS), “Detecting state-based metamorphic properties with *in-vivo* testing,” Spring 2012. “HALO-SE web portal,” Fall 2011.

Ethan Hann (MS), “Visualizing World of Warcraft player data,” Spring 2012.

Alison Yang (BS), “Research notebook for *genSpace*,” Spring 2012.

Jason Halpern (MS), “Understanding user retention in *genSpace*,” Fall 2011.

Evgeny Fedetov (MS), “Towards social diversity in tool recommendations with *genSpace*,” Summer 2011.

Aditya Bir (MS), “Managing complex datasets in *genSpace*,” Spring 2011.