

Education

Doctor of Philosophy in Computer Science <i>Northeastern University</i> Advisor: Jonathan Bell Thesis: Leveraging Dynamic Data Relationships to Amplify Software Tests	September 2020 – December 2024 <i>Boston, MA</i>
Master of Science in Computer Science <i>George Mason University</i> GPA: 4.0; summa cum laude	August 2019 – May 2020 <i>Fairfax, VA</i>
Bachelor of Science in Computer Science <i>George Mason University</i> GPA: 4.0; summa cum laude	August 2015 – May 2019 <i>Fairfax, VA</i>

Work Experience

Research Intern <i>Microsoft Research</i> Worked in the the Research in Software Engineering group.	May 2024 – August 2024 <i>Redmond, WA</i>
Graduate Research Assistant <i>Northeastern University</i> Researched software testing and dynamic analysis for the Java Virtual Machine.	September 2020 – Present <i>Boston, MA</i>
Graduate Teaching Assistant <i>Northeastern University</i> Assisted with the course Advanced Software Engineering (CS 4973/7580).	January 2023 – April 2023 <i>Boston, MA</i>
Graduate Research Assistant <i>George Mason University</i> Developed an approach for repurposing functional tests to detect injection vulnerabilities using dynamic taint tracking. Maintained the Phosphor dynamic taint tracking system.	May 2019 - August 2020 <i>Fairfax, VA</i>
Naval Research Enterprise Internship Program Intern <i>Department of the Navy, Naval Surface Warfare Center Carderock Division</i> Worked on a development team building and maintaining ship design software tools. Focused on tasks related to debugging and unit testing C++ and Fortran code.	May 2018 – August 2018 <i>West Bethesda, MD</i>
Naval Research Enterprise Internship Program Intern <i>Department of the Navy, Naval Surface Warfare Center Carderock Division</i> Developed a Java program to assist in the management of flight deck thermal exposure during F-35B operations on large deck amphibious assault ships.	May 2016 – July 2016 <i>West Bethesda, MD</i>

Awards and Honors

Distinguished Graduate Academic Achievement Award Awarded by George Mason University Department of Computer Science based on academic achievement.	Spring 2020
Outstanding Undergraduate Student Award Awarded by George Mason University Department of Computer Science to faculty-selected students.	Spring 2019
Distinguished Undergraduate Academic Achievement Award Awarded by George Mason University Department of Computer Science based on academic achievement.	Spring 2019
Dean's List Awarded by George Mason University for academic achievement.	Spring 2016 – Spring 2020
Mason Excellence Scholarship Awarded based on academic merit.	Fall 2014 – Spring 2019
Boeing Scholarship Awarded in recognition of academic achievement and leadership.	Fall 2016 – Spring 2017

Publications

1. **In submission.** HOUGH, K., AND BELL, J. Dynamic taint tracking for modern java virtual machines. *Proc. ACM Softw. Eng.* 2, FSE (2025). https://katherine-hough.github.io/files/galette_preprint.pdf.
2. LINCROFT, G., CHO, M., HOUGH, K., BAZZAZ, M., AND BELL, J. Thirty-three years of mathematicians and software engineers: A case study of domain expertise and participation in proof assistant ecosystems. In *Proceedings of the 21st International Conference on Mining Software Repositories* (New York, NY, USA, 2024), MSR '24, Association for Computing Machinery. <https://katherine-hough.github.io/files/itp.pdf>.
3. HOUGH, K., AND BELL, J. Crossover in parametric fuzzing. In *Proceedings of the ACM/IEEE 46th International Conference on Software Engineering* (New York, NY, USA, 2024), ICSE '24, Association for Computing Machinery. <https://katherine-hough.github.io/files/zeugma.pdf>.
4. HOUGH, K., AND BELL, J. A practical approach for dynamic taint tracking with control-flow relationships. *ACM Trans. Softw. Eng. Methodol.* 31, 2 (Dec. 2021). <https://katherine-hough.github.io/files/conflux.pdf>.
5. HOUGH, K., WELEAREGAI, G., HAMMER, C., AND BELL, J. Revealing injection vulnerabilities by leveraging existing tests. In *Proceedings of the ACM/IEEE 42nd International Conference on Software Engineering* (New York, NY, USA, 2020), ICSE '20, Association for Computing Machinery, pp. 284–296. <https://katherine-hough.github.io/files/rivulet.pdf>.