

Kelsey R. Fulton

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Education:

University of Maryland

College Park, MD

Ph.D., Computer Science, GPA: 3.806

2017-Present

Advised by Michelle Mazurek

Selected Coursework: Program Analysis and Understanding, Computer and Network Security, Human Factors in Privacy and Security, Distributed Algorithms and Verification, Interactive Data Analytics, Empirical Methods, Interactive Technologies, and Computational Linguistics 1

University of Maryland

College Park, MD

M.S., Computer Science, GPA: 3.806

2017-2019

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Millersville University of Pennsylvania

Millersville, PA

B.S. Computer Science and Mathematics, GPA: 3.91

2014-2017

Selected Coursework: Artificial Intelligence, Parallel Programming, Data Mining, Transformational Geometry, Number Theory, Mathematical Statistics 2

Awards and Honors:

USENIX Security Distinguished Paper Award. Aug 2020

The National Society of Leadership and Success' Presidential Award (Awarded for completion of training and induction into the society). December 2016

Millersville University's Dean List. Dec. 2014- May 2017

Millersville University Student of Academic Distinction (Given for my performance in my numerical analysis course). May 2016

Publications:

Papers:

Benefits and Drawbacks of Adopting a Secure Programming Language: Rust as a Case Study

Kelsey R. Fulton, Anna Chan, Daniel Votipka, Michael Hicks, and Michelle L. Mazurek. In the Symposium on Usable Privacy and Security, 2021. (Acceptance 26.5%)

Understanding Mistakes Developers Make: Qualitative Analysis from Build It, Break It, Fix It (Distinguished paper award)

Daniel Votipka, Kelsey R. Fulton, James Parker, Matthew Hou, Michelle L. Mazurek, and Michael Hicks. In USENIX Security, 2020. (Acceptance 16.1%)

The Effect of Entertainment Media on Mental Models of Computer Security

Kelsey R. Fulton, Rebecca Gelles, Alexandra McKay, Richard Roberts, Yasmin Abdi, and Michelle L. Mazurek . In the Symposium on Usable Privacy and Security, 2019. (Acceptance 22.3%)

Workshops:

Studying the Costs and Benefits of Rust, Compared to C. In WSIW 2019: Workshop on Security Information Workers.

Journals:

Build It, Break It, Fix It: Contesting Secure Development

James Parker, Michael Hicks, Andrew Ruef, Michelle L. Mazurek, Dave Levin, Daniel Votipka, Piotr Mardziel, and Kelsey R. Fulton. In ACM Transactions on Privacy and Security (TOPS), Volume 23: Issue 2. May 2020.

Magazine Articles:

Build it, Break it, Fix it Contests: Motivated Developers Still Make Security Mistakes

Daniel Votipka, Kelsey R. Fulton, James Parker, Matthew Hou, Michelle L. Mazurek, and Michael Hicks. In USENIX ;login;. To appear.

Posters:

Understanding Mistakes Developers Make: Qualitative Analysis from Build It, Break It, Fix It

Daniel Votipka, Kelsey R. Fulton, James Parker, Matthew Hou, Michelle L. Mazurek, and Michael Hicks. In SOUPS 2019: Symposium on Usable Privacy and Security. August 2019.

Detecting IoT Malware with Power Measurements

Rebecca Gelles, Kelsey Fulton, Rachel Walter, and Dave Levin. In IMC 2018: Internet Measurement Conference. November 2018.

Presentations:

Conferences:

The Effect of Entertainment Media on Mental Models of Computer Security

Kelsey R. Fulton, Rebecca Gelles, Alexandra McKay, Richard Roberts, Yasmin Abdi, and Michelle L. Mazurek . SOUPS 2019.

Unwinding the Runtime Stack: Application Runtime Analysis for Anomaly Detection

Research. Pennsylvania State System of Higher Education Undergraduate Research Conference in Science, Technology, Engineering, and Mathematics 2016.

Workshops:

Studying the Costs and Benefits of Rust, Compared to C. WSIW 2019: Workshop on Security Information Workers.

Invited Talks:

Benefits and Drawbacks of Adopting a Secure Programming Language: Rust as a Case Study. HCIL Annual Symposium 2021.

The Effect of Entertainment Media on Mental Models of Computer Security. DC-APS Fall 2019.

Understanding Mistakes Developers Make: Qualitative Analysis from Build It, Break It, Fix It. DC-APS Winter 2019.

The Effect of Entertainment Media on People's Mental Models of Computer Security. UMD HCIL Annual Symposium 2019.

Improving Security Automation with System Calls Sites Monitoring. 2017 NIST SURF Colloquium.

Unwinding the Runtime Stack: Application Runtime Analysis for Anomaly Detection Research. Oct. 2016 Millersville University of Pennsylvania Tech Talk.

Unwinding the Runtime Stack: Application Runtime Analysis for Anomaly Detection Research. 2016 NIST SURF Colloquium.

Teaching and Mentorship:

Adjunct Professor:

CMSC 388N - Build it, Break it, Fix it: Competing to Secure Software. Winter 2020. Hands-on course where students competed to build secure software and find vulnerabilities in other teams' code.

Teaching Assistantship:

CMSC 412 - Operating Systems. Spring 2018. Examined fundamental principals of operating systems. Topics included processes, threads, scheduling, synchronization, memory management, file system interface and implementation, disk and storage systems, security, and networking

CMSC 216 - Introduction to Computer Systems. Fall 2017. Examined an introduction to how programs run on hardware. Topics broadly included how different programming constructs work a low level.

Undergraduate Students:

Desiree Abrokwa. Summer 2020 - Present. Qualitatively analyzed code and data for a winter course aimed at understanding secure software development.

Anna Chan. Spring 2020 - Present. Helped transcribe interviews of participants exploring the adoption of secure programming languages as well as analyze the interview transcripts.

Yasmin Abdi. Fall 2018 - Spring 2019. Helped conduct and transcribe interviews of participants surveying how the entertainment media affect people's mental models of computer security, helped fill out and submit an IRB application, helped conduct in-person programming sessions to understand the cost and benefits of using Rust in place of C.

Hackathons:

Tech+Research. Fall 2020. Mentored a team of undergraduate women through a research project exploring the privacy boundary collapse during the COVID-19 pandemic. Helped them understand and learn how to develop, deploy, analyze, and present a short research project.

Academic Service:

Organizing Committee:

Workshop on Security Information Workers (2020, 2021)

PC Membership:

ACM Conference on Computer and Communications Security (2021)

Workshop on Technology and Consumer Protection (2021)

Poster Jury:

Symposium on Usable Privacy and Security Poster Jury (2019 and 2020)

External Reviews:

ACM TOPS (2021)

HFES (2021)

COSE (2020)

CHI Late Breaking Works (2020)

Subreview Service:

NDSS (2019 and 2020)

Department Service Positions:

Graduate Student Executive Council (GradCo). 2021. Group of graduate students that are meant to encourage communication between graduate students and faculty, encourage communication among graduate students, and organize social events for graduate students.

Department Education Council. 2020 - 2021 and 2021-2022. Represented CS graduate students on an advisor committee on matters related to education in the department. Elected by my peers.

Reading groups:

MC2 Security Reading Group. Spring and Fall 2020. Directed weekly discussions of recent work in computer security.

Employment:

University of Maryland Research Assistant	August 2018 - Present
Federal Trade Commission Student Researcher	May 2020 - August 2020
National Institute of Standards and Technology Pathways Student Researcher	August 2017 - May 2020
University of Maryland Teaching Assistant	August 2017 - May 2018
National Institute of Standards and Technology SURF Student	May 2017 - August 2017
Sheetz Salesperson	June 2015 - May 2018
National Institute of Standards and Technology SURF Student	May 2016 - August 2016
Millersville University's Computer Science Department Grader	August 2015 - May 2016

