

Samuel Roth

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EDUCATION

The Ohio State University.....**Columbus, Ohio**

Master of Science, Computer Science and Engineering.....*August 2016 to May 2018*

- *Relevant coursework.* Algorithms, Network Programming, Advanced Operating Systems, Software Reliability & Security, Mobile Application Development, Information Security Projects, Software Engineering, Data Mining, Network Science

Ohio Northern University.....**Ada, Ohio**

Bachelor of Science, Computer Engineering.....*August 2012 to May 2016*

- *Relevant coursework.* Data Structures & Algorithms, Databases, User Interface Design, Electric Circuits, Signals and Systems, Digital Logic, Electronics, Microprocessors, Computer Architecture, VLSI System Design, Embedded Systems

PROFESSIONAL EXPERIENCE

Jackson Tube Service, Inc.....**Piqua, Ohio**

Software Engineer.....May 2017 to Present

- Built a RESTful API (Python, Flask) to interact with legacy systems and to serve as a foundation for software deployed across the company.
- Building kiosk software with JavaScript (React, Electron) and Python (TKinter, PyQt) to help plant employees track and visualize orders.
- Creating a new check-in system that improves visitor experience and communication across various company departments.

The Ohio State University.....**Columbus, Ohio**

Graduate Teaching Associate.....August 2016 to May 2018

- Delivered lectures, graded student assignments, led hands-on programming labs, held office hours, and proctored exams in the Computer Science and Engineering department. Personally managed sections of approx. 40 undergraduate students each semester.
- Helped coordinate course delivery across other Teaching Associates, scaling our lectures and labs to support ~500 undergraduate students.

Carnegie Mellon University.....**Pittsburgh, Pennsylvania**

Research Assistant, Institute for Software Research.....May 2015 to September 2015

- Worked on the Usable Privacy Project, an interdisciplinary research initiative seeking to help people better understand how their personal information is collected and shared online. More information is available on the project website: <https://usableprivacy.org>
- Turned hand-drawn mock-ups created by legal and privacy researchers into functioning Chrome extensions using AngularJS and CSS.
- Organized and led focus groups to gather feedback on the usability and effectiveness of the extensions; received largely positive feedback.

SAY Security Group USA.....**Ada, Ohio**

Software Engineering Intern.....January 2015 to May 2015

- Used the Qt C++ cross-platform application framework to develop an API for managing dynamic user interfaces on surveillance software used by law enforcement and private companies. Wrote documentation and a test suite for this API, demonstrating its capabilities to customers.

TECHNICAL SKILLS

- Building software across the product stack utilizing modern technologies like *TypeScript, Python, Vue, and React*.
- Building, testing, and deploying *RESTful* and *GraphQL APIs*, including writing custom queries for *SQL* and *NoSQL* systems.
- Native mobile application development in *Swift* and *Java*, including managing the build and release pipelines with *Fastlane*.
- Low-level software development with technologies ranging from *assembly, VHDL, and SystemVerilog*, to modern *C, C++, and Rust*.
- Hands-on experience with various different cloud platforms, including *Google Cloud, Firebase, and Amazon Web Services*.
- Creating and leveraging high-quality UX design systems, using tools such as *Adobe Photoshop* and *Sketch*.

PUBLICATIONS

- S. Roth. **Tort Liability in Open Source Software Systems.** *Information Systems Security Association Journal*, December 2017.
- S. Jana, Y. Kang, S. Roth, B. Ray. **Automatically Detecting Error Handling Bugs Using Error Specifications.** *25th USENIX Security Symposium*, August 2016. ([Paper](#))

SELECTED PROJECTS

- *Clique.* Social networking platform that requires a membership fee instead of compromising UX with advertisements and spam. Mobile applications built with React Native, backend built with TypeScript, Express, PostgreSQL, and AWS. Currently in private testing. ([Website](#))
- *Core Interpreter.* Core is a rather simple programming language with variables, control flow, console I/O, and more. I implemented a recursive-descent parser for this language in Rust during my graduate studies at Ohio State. ([Website](#))
- *NES HD.* For my undergraduate capstone project, I worked on a team to emulate the functionality of the Nintendo Entertainment System on an FPGA, writing its various chips in SystemVerilog. ([Website](#))