

**PROFESSIONAL EXPERIENCE** **Square Inc., San Francisco, CA**

May 2015 - present

*Software Engineer, Information Security*

Co-built automation infrastructure to drive privacy compliance processes (deletion/export). Designed access logging with service tracing. Designed and built traffic egress controls with review systems to support third party vendor/service provider integrations. Reviewed vendor security assessments every week, helped revamp our security processes around global procurement.

Reworked portions of the data pipeline and performed a first-pass at productionizing experimental code via converting jobs from pure Hadoop to Spark for a 5x speedup; moved from generating models by hand to generating models daily. Built data administrative panels.

Designed and organized an introductory CTF for Grace Hopper 2017 with an accompanying 2-hour workshop, garnering 2000 users and 300 attendees respectively. Led team of 5 engineers to build a custom CTF platform running in Google Cloud with on-demand container orchestration, with help from additional engineers to design and test challenges.

Migrated tokenization system to use HSM-backed fingerprints. Built robust, shardable backfill system with administrative UI and metrics for Java services. Helped manage internal PKI including secrets and certificates management/distribution and created custom tooling and automation. Aided in database sharding projects for core secret store services. Provided advice for scoping out privacy initiatives for the data infrastructure team. Served as primary key manager for PCI PIN tasks, and aided in various PCI audits.

**BSidesSF, San Francisco, CA**

November 2018 - present

*Volunteers Co-Lead, Event Co-Organizer*

Wrangle volunteers, and help as core staff to run BSidesSF, a security con in San Francisco.

**Facebook Inc., Menlo Park, CA**

September 2014 - December 2014

*Production Engineering Intern, Data Infrastructure*

Wrote profiling tools to monitor Hadoop job pipelines and hosts in the data warehouse.

**Square Inc., San Francisco, CA**

May 2014 - September 2014

*Software Engineering Intern, Information Security/Cash*

Worked on fraud detection services for Square Cash using machine learning.

**Google Inc., San Francisco, CA**

May 2013 - August 2013

*Software Engineering Intern, Chrome OS Systems Security*

Contributed to the (re-)implementation of the TPM software on Chromebooks.

**EDUCATION***Unfinished PhD, Computer Science*

September 2011 - May 2015

Research Areas: Stylometry, Deanonimization, General user privacy  
University of Waterloo, Waterloo, ON, Canada

*Bachelor of Science, Computer Science (GPA = 4.00)*

August 2008 - May 2011

Concentrations: Networks, Security, Software Engineering, Artificial Intelligence  
Southern Illinois University, Carbondale, IL, USA

**TALKS**“Anti-Privacy Anti-Patterns“ *BSidesSF 2019*“From Zero To Cool: Lessons Learnt from Running CTFs“ *NBT4Con*“You Can’t Secure What You Can’t See“ *Presentation, sqr00t 2017/2018*“Making Use of Visualization to Understand Traffic/Data Flow“ *Presentation, Hear + Now 2017*“Capture The Flag: Learning to Hack for Fun and Profit“ *Workshop, Grace Hopper 2017*.“So You Want to Hack The Planet: Demystifying Careers and Opportunities in Cryptography, Security and Privacy“ *Career Panel, Grace Hopper 2016*.“Protecting Infrastructure Secrets with Keywhiz“ *Presentation, CyberSec 2015*.