

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

May 2015 - present

Senior Software Engineer, Information Security

Supporting data inventory software development based on Amundsen. Co-built automation infrastructure to drive privacy compliance processes (deletion/export). 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.

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

Conference Organizer (Volunteers/Staffing)

Managed staffing of 350+ volunteer shifts with close to 200 volunteers, for a total of 1200+ hours. This includes volunteer registration, coordinating with other leads for staffing requirements (especially Public Safety), managing communications with volunteers around expectations and training, and making any last-minute decisions around staffing during the conference itself. Provided support to other leads related to shirt design, venue layout planning, incident response.

2020 pulled in over 2300 attendees, including members of press and various corporate sponsors. Presentations were in 4 main tracks, with notable features being several Off-The-Record talks, livestreaming, a track entirely in an IMAX theatre, several villages, and an on-site CTF.

Google, Square, Facebook; Bay Area, CA

2013 - 2014

Misc internships.

EDUCATION*Unfinished PhD, Computer Science*

September 2011 - May 2015

Research Areas: Stylometry, Deanonymization, 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*"Third-Party Integrations: Friend or Foe" USENIX Enigma 2020**"Money talks: How Fintech Innovation can Close the Gap in Financial Equality" Panel, GHC 2019**"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" sqr00t 2017/2018, OWASP meetup 2019**"Making Use of Visualization to Understand Traffic/Data Flow" Hear + Now 2017**"Capture The Flag: Learning to Hack for Fun and Profit" Workshop, GHC 2017**"So You Want to Hack The Planet: Demystifying Careers and Opportunities in Cryptography, Security and Privacy" Panel, GHC 2016**"Protecting Infrastructure Secrets with Keywhiz" CyberSec 2015***OTHER**

Tor high-traffic exit relay operator

Amateur radio technical license: KM6ADA