

Adam Richardson

Candidate for Honours Bachelor of Computer Science, University of Waterloo (Dec. 2020)

as3richa@uwaterloo.ca; as3richa.github.io

Work Experience

Coinbase - Software Engineer on Commerce, Application Security September 2017 – April 2019

- Built a SaaS cryptocurrency ecommerce platform, featuring embeddable and hosted checkout flows as well as a full-featured merchant dashboard, which went on to process more than \$10M USD in transaction volume
- Wrote a novel publish-subscribe service on top of bitcoind, reducing the average time to detection of Bitcoin transactions by a factor of 10
- Implemented new security checks and improved usability and code quality in [Salus](#), Coinbase's open-source vulnerability scanner

Stripe - Engineering Intern on Storage January 2017 – April 2017

- Lead a mission-critical shard rebalancing of Stripe's primary MongoDB database, deploying hundreds of new servers and migrating hundreds of gigabytes of live production data
- Built a custom MapReduce pipeline to compute an ideal partitioning of the shard keyspace, based on an elegant dynamic programming formulation
- Implemented and improved internal database tooling; reduced replication latency by a factor of 3 for routine manual failovers

Shopify - Software Developer Intern on Infrastructure January 2016 – August 2016

- Built and deployed a Lua caching layer for NGINX load balancers, allowing an additional 4% of all incoming requests to the main Shopify app to be served from cache
- Improved and refactored a large-scale HTTP load testing framework; implemented a feature allowing synthetic load to be generated in a globally-distributed fashion
- Implemented a clean-room build system for internal Debian packages, thereby allowing Shopify's custom NGINX patch to be recompiled and deployed at the click of a button

Personal Projects

- **libcrex**: feature-complete, performant regular expression library, written in C; featuring a cross-platform interpreted VM, as well as a compiler targeting x86_64 on Linux and Darwin
- **raycast**: in-browser raycasting 3D renderer demo; featuring a procedurally-generated maze in the style of a classic Windows 95 screensaver
- **goword**: in-browser multiplayer competitive word game, based on Boggle, in JavaScript and Go