

# JAY LIM

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## SUMMARY

- Experienced with infrastructure and performance tuning.
- Go, Ruby, JavaScript, C++, C; Docker, Kubernetes, MySQL.

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## EDUCATION

**University of Waterloo** 2016 – 2021 (expected)  
Bachelor of Computer Science (Co-op) **GPA: 3.96/4.0, Major Average: 96.3/100**

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## WORK EXPERIENCE

**Mozilla** May 2018 – July 2018  
Desktop Firefox Engineering Intern – Performance (JavaScript, C++) Toronto, ON

- Diagnosed performance problems for about:newtab via detailed profiling and research.
- Reduced 64% of memory usage for about:newtab pages by sending blobs instead of DataURLs over IPC.
- Stored JS bytecode in startup cache to preload scripts, reducing overall about:newtab page load time by 18%.
- Reimplemented an internal Firefox protocol (moz-page-thumb://) to proxy image load from disk for unprivileged content processes through the privileged main process.

**Shopify** January – April 2018  
Production Engineering Intern – Core Architecture, Observability, RPC (Go, Ruby) Ottawa, ON

- Leveraged MySQL binlog streaming to build a real-time database corruption detector.
- Owned the entire observability infrastructure for 100+ services: built an end-to-end trace processing pipeline, and designed a service graph to visualize service communication.
- Participated in on-call duties for Shopify's core infrastructure during working hours, dealing with bare-metal (Docker) and cloud (Kubernetes).

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## PROJECTS

**rgit**, a distributed version control system, just like Git (Ruby) 2018 – current

- Implementing a git client from scratch, focusing on mostly plumbing commands.

**wharfkit**, a tool to manage multiple Docker hosts locally (Go, Bash) 2018 – current

- Just like docker-machine, but with shorter boot time and more efficient use of disk space and memory.
- Utilized xhyve hypervisor with a custom lightweight Linux kernel, built specifically to run Docker containers.

**ceroku**, a Docker-based Platform as a Service, inspired by Heroku (JavaScript, Ruby, Bash) 2017

- Designed the build and deploy pipeline to accept jobs triggered by pre-receive git hooks in bare git repositories.
- Configured reverse proxies: HAProxy for both git and deploy servers, and traefik for app servers (Docker).

**project-x**, an Apache MINA-based game server emulator (Java, JavaScript) 2013

- Reverse engineered a C++ multiplayer game client using IDA and analyzed TCP/IP network packets between server and client using Wireshark.
- 12,000+ downloads and trended on an MMORPG forum with 39,000+ views.

*Open-source contributions:* **sirupsen/logrus**, **Shopify/ghostferry**, **mozilla/gecko-dev**

*More technical projects at:* **<https://imjching.com/codings>**

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## AWARDS

**Grand Prize of \$100,000**, MasterCard Masters of Code™, San Francisco December 2015

- Won Grand Finale after competing against 3,000 hackers from 12 different cities worldwide.
- Developed web-based SaaS platform using Ruby on Rails and MasterCard APIs.
- Featured on various sites including Mashable, Business Wire, and MasterCard.