

Richard Wu

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Experience

Google | Software Engineering Intern

Mountain View, CA

Hands-on research on the Cloud & Borg team working primarily in C++, Go, and R.

- Ported, optimized and extended Go scheduling simulator—still in use by the Borg team—*reducing simulation runtime by 60x*.
- Simulated and benchmarked the impact of a cluster NUMA-aware algorithm on job scheduling; **drafted white paper for publication**.
- Analyzed CPU usage time-series to identify and implement improved load prediction algorithm, *reducing forecast lag from 47 to 7 seconds*.

Shopify | Developer Intern

Ottawa, ON

Backend work on shipping micro-service in Ruby and full-stack work on core Shopify platform in Rails.

- Introduced **ETL framework** with smaller, testable modules for polling tracking data from shipping carrier APIs.
- Implemented bulk USPS tracker polling, decreasing upper bound delay for tracking updates from *a few hours to 15 minutes*.
- Integrated shipment options, enabling **300k+ merchants** to purchase shipping label add-ons.

Publications

Cluster-Level NUMA Implementation & Evaluation

Co-author of paper on a NUMA-aware scheduling algorithm and its impact on Google workloads.
Pending review for publication at HPCA'18.

Projects

Studbuds.com Tutoring Marketplace

Founder and lead developer. Rails web app that supports Stripe P2P payments, live notifications, and live chat over WebSockets. **250+ beta users.**

Awards

1st Place, Citadel Datathon

May 2017

\$20,000 cash prize. Analyzed NYC transport data with statistical models to draw key conclusions in a team of 4.

- Employed **L2 logistic regression with 5-fold cross-validation** to predict transportation type given test rider with **mean AUROC of 0.7**

1st Place, Hack the North

September 2015

Top 12 teams out of 230+. Built an Android app that anonymously livestreams video to a web interface in a team of 4.

6th/6000+, Canadian Senior Mathematics Contest

98th Percentile, Canadian Open Mathematics Challenge

Education

University of Waterloo

Bachelors in Honors Computer Science, 2020

GPA: 90%

- Dean's Honor List
- President's Scholarship of Distinction
- Software Engineering Entrance Scholarship
- Joe C. Lee Math Entrepreneurial Scholarship

Online

- Machine Learning (Coursera)
- ML with TensorFlow (Google)
- Supervised Learning with scikit-learn (DataCamp)

Skills

Languages

C++ • Python • Go • Ruby • R • SQL • Bash • C • JavaScript

Frameworks & Libraries

Linux • Rails • scikit-learn • pandas • matplotlib • data.table • ggplot2 • TensorFlow • Redis • Node.js • NGINX