

Richard Wu

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Experience

Citadel | QR Analyst & Data Scientist Intern

Chicago, IL

Alpha research on the Data Strategies Group.

- (NDA) Researched and productionized alpha from new datasets with **ML/statistical models**.

Cockroach Labs | Software Engineering Intern

New York, NY

Distributed SQL processing for CockroachDB (Go).

- **Improved query times by 10-20%** by introducing parallel aggregations.
- **Increased query throughput by 2.24x** by designing and implementing more efficient SQL joins for interleaved tables ([RFC: git.io/vNgoH](https://github.com/rwu1997/vNgoH)).

Google | Software Engineering Intern

Mountain View, CA

Hands-on research on the Borg team (C++, Go, R).

- **Streamlined simulation run times by 60x** by overhauling cluster scheduling simulator.
- **Shaved CPU load prediction lag from 47 to 7 seconds** by implementing an improved time series forecast algorithm.

Shopify | Software Developer Intern

Ottawa, ON

Backend and full-stack work on shipping API (Ruby).

- **Reduced multi-hour shipping updates to 15 minutes** by integrating bulk CSV polling.

Publication

NUMA Implementation & Evaluation

Lead author of paper on novel cluster scheduling algorithm and its impact on Google workloads.

Pending review for publication at M'WARE 18.

Projects

BetterSQL optimizer

[git.io/vbaEg](https://github.com/rwu1997/vbaEg)

Prototype SQL query optimizer in OCaml.

Studbuds.com Tutoring Marketplace

Founder & lead developer. 250+ users.

Awards

1st Place, UofT Citadel Data Open

January 2018

Placed 1st out of 25 teams at the University of Toronto regional qualifiers.

- Utilized **generalized linear models** to inference relationships between vehicular accidents and circumstantial factors.

1st Place, UofW Citadel Data Open

May 2017 & December 2017

Represented UofWaterloo at championships after placing 1st out of 20 teams.

- Employed **regression & classification models** to formulate statistically sound [conclusions on US education data](#).

1st Place, Hack the North 2015

Built an Android app that anonymously livestreams video to a web interface.

6th/6000+, Canadian Senior Math Contest

98th percentile, Canadian Open Math Challenge

Education

University of Waterloo

Bachelor of Computer Science, Statistics minor, 2015 – 2019

GPA: 91%

- President's Scholarship of Distinction
- Software Engineering Scholarship
- Joe C. Lee Math Entrepreneurial Award
- K.C. Lee Computer Science Scholarship
- Konrad Group Technology Scholarship

Currently reading

- Deep Learning (Goodfellow et al.)

Skills

Languages

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

Frameworks & Tools

Linux • pandas/numpy • PyMC • sklearn
• Keras • TensorFlow • StatsModels • Postgres