Terry Chen

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Skills

Languages	C++, C, Python, R, Scala, Java, SQL, TypeScript, JavaScript, Haskell
Technologies	Boost, React, Google Firebase, Apache Spark, pandas, Rcpp
Tooling	Linux, Git, LXC, Bash, Valgrind, Travis CI, CircleCI, GitHub Actions

Work Experience

Undergraduate Research Assistant / University of Waterloo, Dept. of Statistics — May 2020 – Present

- Ported real-time machine learning algorithms from Java to C++ using Boost, Eigen, and TBB.
- Improved performance 20 times through identifying bottlenecks, designing custom data structures, and parallelizing single-threaded algorithms.
- Collaborated with an inter-disciplinary team spread across time zones under minimal management.
- Analyzed solution results, documented design choices, and presented findings to the team.

Freelance Web Developer / Jesus Week Waterloo — February 2019 – November 2019

- Collaborated with stakeholders to develop a unified visual brand for digital and print media.
- Redesigned and refactored the website to meet WCAG-2.1 accessibility standards.
- Increased session duration by 240% and decreased bounce rate by 33%.

Projects

Sequential Graph Matching with Sequential Monte Carlo — May 2020 – September 2020

- C++ implementation of *Sequential decision model for inference and prediction on nonuniform hypergraphs with application to knot matching from computational forestry*.
- Efficient parameter estimation with parallelized MCEM used to perform real-time identification of k-parite graph matchings with a Sequential Monte Carlo sampler.
- Contributed towards cutting-edge research in automated lumber strength prediction.
- Integrated solution with Rcpp for general distribution as a cross-platform R package.

VM Final Group Project — November 2019 – December 2019

- With a partner, implemented a highly complex clone of the Vim text editor in under two weeks.
- Designed a flexible application architecture, allowing for quick implementation of major features.
- Received a final grade of 97%.

Awards

President's Research Award / University of Waterloo — Fall 2020

2nd overall / Pwn2Win CTF (Capture The Flag security challenge) — 2018

Organizations

Editor / math**NEWS** — Jan. 2019 – Apr. 2020, Sept. 2020 – Present

- Collaborated with the rest of the editorial team to copyedit, layout, and publish issues on a fortnightly basis.
- Adapted and documented internal processes to ensure a smooth transition to remote work.
- Oversaw server administration and upgrades, including enabling HTTPS and migrating to a new platform.

Education

Candidate for B.Math. Computer Science and Statistics / University of Waterloo — 2018 – Present

- 85% cumulative average, 87% major average with advanced CS and math courses.