

Brighten Zhang

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SKILLS

Languages

HTML & CSS, C/C++, Python, Java, JavaScript, TypeScript, Racket, Ruby, Applescript

Tools & Frameworks

Django, Flask, React.js, Node.js, Selenium, Cypress, Git, Heroku, MongoDB, Visual Studio

EDUCATION

University of Waterloo

Waterloo, ON

Candidate for BCS Computer Science

Sep. 2022 - Apr. 2027 (expected)

- President's Scholarship of Distinction, Excellent Academic Standing
- Relevant courses include CS 245 Logic and Computation, CS 246 Object-Oriented Software Development

WORK EXPERIENCE

QA Automation Engineer

May. 2023 - Present

Relay Financial

Toronto, ON

- Implemented and maintained a Java Selenium-for-Android data-driven testing framework alongside a TypeScript Cypress web framework to verify and ensure the functionality and performance of Relay's mobile and web applications
- Delivered and documented 100+ automation scripts across web and mobile, increasing mobile end-to-end coverage by over 70% and raising web automation coverage to 95%
- Reduced mobile daily regression runtimes by over 40% by refactoring base driver programs; restructured core testing utilities to emphasize reusability and support an efficient automation process
- Developed a Java HTTP client to streamline mobile regression integration and smoke routines via Relay's internal REST API; validated requests using back-end API testing
- Introduced a department-wide de-centralization of the QA testing responsibilities by delegating tasks to individual product engineering teams to achieve an expedited release process in the context of an Agile workspace

Summer Camp Counsellor

Jul. 2021 - Aug. 2022

City of Toronto

Toronto, ON

- Collaborated with other counsellors to design and lead engaging camp activities for young children aged 6 to 12
- Fostered positive social connections between campers and eased pandemic anxiety
- Maintained clear communication with parents and guardians to ensure participants' safety and enjoyment

PROJECTS

Moraband Chess Engine | [Github](#)

- Developed a UCI-compatible chess engine in C++ using modern search and evaluation techniques with a legal move generator measuring 160,000,000 moves/second on a single Apple silicon M1 thread
- Applied a traditional alpha-beta search algorithm within a nega-max framework with iterative deepening, and incorporated transposition tables and tapered material values in evaluation functions; multi-thread support for up to 16 threads
- 800+ evaluation parameters tuned and optimized via high-precision Gradient Descent techniques; non-linear time-management tuned via Confident Local Optimization
- Hosted a Lichess.org BOT account on the Heroku cloud as a Python app with 200+ games played per month and achieving a maximum rating of 2275 Elo against human and BOT opponents

Word Predictor | [Github](#)

- Implemented a trigram language model based on Markov Chains in Python using the nltk module to predict the appropriate next word in a sentence based on an input text
- Created a Flask REST API with message endpoints and responses from an SQLite3 database with over 1,000 entries

imgdb Image Host | [Github](#)

- Built an image-hosting web application using the Node.js framework to easily share images online publicly with minimal dependencies