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 30+ automation scripts across web and mobile, increasing mobile end-to-end coverage by over 70% and raising web automation coverage to 90%
- 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 integration of QA automation 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