Brighten Zhang

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SKILLS

Languages	C/C++, Python, Java, JavaScript, TypeScript, Racket, Ruby, Applescript
Tools & Frameworks	React.js, Node.js, Django, Flask, Selenium, Cypress, Git, Heroku, Sequelize

EDUCATION

University of Waterloo Waterloo, ON
Candidate for BCS Computer Science *Sep. 2022 - Apr. 2027 (expected)*

- Relevant courses: Logic and Computation, Object-Oriented Software Development

WORK EXPERIENCE

QA Automation Engineer May. 2023 - Aug. 2023
Relay Financial *Toronto, ON*

- Verified the performance of Relay's mobile and web applications by implementing a Java Selenium-for-Android data-driven testing framework alongside a TypeScript Cypress web framework
- Increased mobile end-to-end coverage by 70%, raised web automation coverage to 90%, delivered 30+ automation scripts
- Reduced mobile daily regression runtimes by 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 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 ranking in the top 3% of all players with a peak rating of 2275 Elo

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