Yicheng(Helen) Zhang

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Technical Skills

Languages: C++, Javascript, Python, C, R, Racket, LaTeX, Bash, MIPS, Java, HTML/CSS
Technologies/Frameworks: Gherkin Testcafe, Cucumber, Node.js, React, Jenkins, AWS, Git, Vim, NumPy, Scipy, Matplotlib, WordPress, Linux/Unix, Jira, Jupyter Notebook

Experience

ODAIA Intelligence Inc. **May 2022 – Aug 2022**
Test Engineer *Toronto, ON*

- Designed and developed a comprehensive testing system from the ground up that replaced manual efforts with **automated UI tests** for software that utilizes AI predictions to recommend customers their best-fit healthcare proxy
- Validated the correctness of AI-produced results through multi-staged Jenkins data pipelines, which improved testing coverage and significantly reduced maintenance costs using **Javascript**, **Gherkin testcafe**, **Cucumber** and **Jenkins**
- Visualized test results by periodically generating an **HTML** report that indicates the most vulnerable areas of the system by including snapshots of the software process and providing aggregated statistics using **JSON TestCafe Reporter**
- Improved robustness of the testing framework by creating an automated script that fetches data from **DynamoDB** to ensure the correctness and sanity of the web display and data from the users' perspective

University of Waterloo **Sep 2021 – Dec 2021**
CS136 Instructional Support Assistant *Waterloo, ON*

- Developed and maintained **bash scripts** to automate the evaluation procedure for students' assignment submissions
- Led the design for final exam review tutorial and arranged weekly meetings with the graders for task allocations
- Assisted students in learning course materials by answering questions on online platforms and live office hours, providing assignment feedback and sending performance analyses to instructors for common errors and misconceptions

Projects

Biquadris | *C++, Xming*

- Designed and developed a two-player competitive Tetris game composed of 6 levels, 6 types of blocks and a variety of special trigger events with two other classmates using **UML** diagrams and **object-oriented** principles
- Applied the **Observer Design Pattern** to interact with game graphics and the **Factory Design Pattern** to easily instantiate level and block objects while abstracting away implementation details
- Utilized common **STL** data structures such as **vectors** and **smart pointers** for safe memory management and implemented **exception handlers** for graceful and informative error handling

Animal Recognizer | *Racket*

- Built a **Machine Learning** program from scratch using **ID3 algorithm** that can recognize what the animal is based on a set of given attributes, highly optimized to achieve sensitivity $> 50\%$ and specificity $> 90\%$

JPEG Image Compressor | *Python (Scipy, Jupyter Notebook)*

- Used Python and Scipy to implement JPEG image compression using DCT
- Able to compress the image to any compression ratio

Awards

- University of Waterloo International Student Entrance Scholarship ($10,000)
- University of Waterloo President's Scholarship of Distinction ($2,000)
- Highest scorer in TCDSB for Canadian Senior Mathematics Competition (Top 1.5% in Canada)
- American Invitational Mathematics Examination (AIME) qualifier (Top 5%)

Education

University of Waterloo **Sep. 2020 – Present**
Bachelor of Mathematics, Computer Science *Waterloo, ON*

Bachelor of Mathematics, Combinatorics and Optimization