Houfu Chen
Electriccal & Computer Engineering

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https://github.com/chf-NewStart

Education

University of Toronto (Graduate)
September 2023- March 2025
- Candidate for Master of Engineering in Electriccal & Computer Engineering
- Recommended to enhance MEng program through promotional testimonial

University of Waterloo (Undergraduate)
September 2018- June 2023
- Bachelor of Applied Science, Nanotechnology Engineering (With Distinction)

Awards & Achievements
- President's Research Award (Sep 2019)
- President's Scholarship of Distinction (July 2019)
- Ontario Scholar, Minister of Education (Jun 2017)
- Top 25% in Euclid Mathematics Contest, Top 1 in highschool (2017)

TA Experience

APS1070 (Foundations of Data Analytics and ML)
Winter 2024, Summer 2024, Fall 2024, Winter 2025 @ UofT
- Marking, Tutorial (12 per term), Piazza, Invigilation
- Graded more than 200 projects per term

CSC108 (Introduction to Computer Programming)
Winter 2024, Fall 2024 @ UofT
- Marking, Office Hour, Classroom Help, Invigilation

MIE370 (Introduction to ML)
Summer 2024, Fall 2024 @UofT
- Created 2 Projects, 2 Tutorials, and 2 Exam questions.
- Marking, Office Hour, Invigilation

Work Experience

CarPlay Network Performance Optimization | Ford Motor | Python, Slash testing, DET
May 2022 - August 2022
- Fixed issues from the Transmission Control Unit (TCU) daily performance testing.
- Designed ways to optimize and test the TCU throughput in different scenarios.
- Fixed 40+ SSH exception issues by updating the Ubuntu and iPerf versions, changing the WLAN cmd.
- Fixed several selenium exception errs by changing the ChromeDriver version of the testing laptop.
- Wrote a guide on how to operate Ubuntu and how to use iPerf3 to run the performance tests, as well as how to fix certain common issues like SSH exception and selenium exception, for later testers' use.

QA-Developer | Imagine Communications Corp | TypeScript, MySQL
January 2021 - April 2021
- Writing daily tests to notify the team of daily server status,
- Retrieving information from the webpage UI, also writing autonomous testing scripts to interact by clicks, keystrokes, etc (By css).

QA Automation Specialist | Teranet CMS, Recovery Division | C#, Selenium
September 2020 - December 2020
- Writing regression tests with C# under Selenium framework.
- Optimizing test execution time and technical health.

QA-Developer | Manulife, Online Banking Squad, Waterloo | JavaScript, React, WebDriver IO
January 2020 - April 2020
- Developed and fixed components in web pages using Modern (ES6) JavaScript, HTML, and MUX components.
- Wrote BDDs to test cross-browser (4 different browsers) behavior of online banking site, found and fixed 9 IE defects in total.
- Improved technical health of the entire code base, fixed 40+ SonarQube issues, achieved 98%+ code coverage.
- Conducted a product demo in a 50+ people group meeting, including developers, business analysts, stakeholders, and product owners.

Projects (More on my website)

Emergency Route Planning | Python, LLM
September 2024- December 2024
- Used several APIs and geospatial analysis tools to simulate route planning.
- Devised a new algorithm based off from ACO which completely beats traditional Dijkstra in terms of total evacuation time.
- Deployed Meta-prompt using evaulation system, fed to LLM to produce the optimal route, leading to consistent outperformance compared to simple Dijkstra

Food-Raccoon: Food Recommendation System | Python, LLM
November 2024
- Transform the 'craving flavour' into actual restaruant recommendations through LLM and several other APIs such as Yelp and Google Places.

Autonomous Robot | LEGO MINDSTORMS
July 2018 - August 2018
- In a group of 3, successfully designed, programmed, & troubleshot the robot to perform tasks, received 3rd place.
- Presented 4 tasks in final demo (retrieving and tracking), using only one month to prepare.

Technical Skills

Spoken Language:
English (IELTS score 8)
Chinese (Mandarin, 1st language)

Automation Testing:
SlashBDD, TDD, Selenium, Gherkins, React, Redux, Nodejs Cumcumber, WebDriver IO, BrowserStack, SonarQube, ESLint

Azure:
Azure Data Factory, Azure Data Lake, Azure Databricks, Azure Cosmos DB, Azure Notebook

Programming Languages:
Python, C++, Bash scripting, HTML, CSS, Modern JavaScript, Java, C#, Matlab

Data/Circuit/Analysis:
MS Office, SQL Microsoft Server, LTspice, SolidWorks, AutoCAD, LayoutEditor