

Eric Liu

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Education

University of Waterloo

CANDIDATE FOR BACHELORS OF COMPUTER SCIENCE

Waterloo, Canada

Sept. 2021 - April. 2026

Technical Skills

Languages: JavaScript/TypeScript, C++, Python, HTML, CSS, C, SQL, Bash

Tools: React, Express.js, Node.js, PostgreSQL, Axios, Angular, Material UI, Playwright, Git, Pandas, NumPy, Matplotlib, Selenium

Work Experience

SynMatrix Technologies Inc

Richmond Hill, Canada

SOFTWARE DEVELOPER

Jan. 2023 – April. 2023

- Utilized JavaScript, Playwright, and **TDD** to innovate a JSON-driven, **object-oriented** web automation and front-end testing software tool to perform unit, integration, performance, and end-to-end testing for the enterprise software, ultimately expediting the SDLC
- Leveraged **modularization**, **page-object model**, **polymorphism**, and the **factory method** to improve program encapsulation, scalability, abstraction, and efficiency by **64%**
- Developed a single-page application with **React and Express.js**, enabling users to upload, edit, execute and visualize input JSON files for the software tool
- The tool served as a prototype to drive the AI based technical support platform and was recognized by multiple development teams

GrantMatch

Oakville, Canada

DATA ENGINEER

May. 2022 – Aug. 2022

- Utilized **HTTP Requests**, **BeautifulSoup** and **Selenium** to program **automated scripts** that perform user login and extract desired information from **over 10** online database platforms with **4000+ data entries**
- Created **over 50** web scrapers in Python using Scrapy, Selenium, and BeautifulSoup with **multithreaded design** to extract data from static and dynamic websites
- Maintained and designed the user interface of the data catalog web application using Python Dash and Dash Bootstrap components
- Built pipelines to transform **semi-structured and unstructured data** and implemented lambda triggers to map **549** scraped funding programs into the intermediate PostgreSQL database

Projects

MealForU



REACT, EXPRESS.JS, POSTGRESQL, AXIOS, TAILWIND CSS, MATERIAL UI

Dec. 2023 – Jan. 2024

- Developed a dietary application utilizing the Edamam API, in which users can input the preferred nutrient composition to obtain recipes that provide ingredients, detailed instructions, and recipe image
- Performed **server-side input verification** and conducted API calls to extract recipes from all pages in **linear time** while allowing users to save recipes to favourites
- Enable users to delete and edit recipes stored under favourites and implemented a **REST API** to perform **CRUD** operations for the **PostgreSQL** database
- Implemented **clean and responsive** UI, and the feature where users can upload their own recipe

Newtonian Apples



REACT, WebGL, C#, MATERIAL UI

Nov. 2023 – Nov. 2023

- Collaborated with 3 hackers to create a physics simulation web app, designated to engage students with physics and enhance their learning experience
- Reverse-engineered** Unity WebGL build and **embedded** physics simulations into the single-page application developed using React and Material UI
- Assisted other developers in the development of Unity physics modules and employed **class, inheritance, and polymorphism** concepts to resolve various bugs

Steam DBot



PYTHON, PANDAS, BEAUTIFULSOUP, NUMPY, JSON

May. 2022 – May. 2022

- Programmed a bot to obtain the name, original price, discount amount, discounted price, and the links to web pages of **all discounted games** on Steam
- Extracted data from **760+** pages of the Steam API and utilized **parallel programming** concepts to improve program efficiency by **230%**
- Cleaned and transformed the extracted data and outputted results into a CSV file with UTF-8 encoding