

HAOFENG (ERIC) LIU

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Technical Skills

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

Libraries and Frameworks : React, Playwright, Node.js, Express.js, Angular, Scrapy, Pandas, NumPy, Selenium, BeautifulSoup, Requests, HTTP, lxml, Matplotlib, Dash, Dash Bootstrap, yFinance, Psycpg2

Experience

Acentury Inc 🌐

January 2023 – April 2023

Front-end Developer, Co-op | React, JavaScript, Playwright, Express.js, HTML, CSS, JSON

Richmond Hill, ON

- Employed JavaScript, Playwright, and the **Test-driven Development** technique to innovate an **object-oriented web automation and front-end testing platform** dedicated for the SynMatrix Research and Development team
- The platform automatically parses a JSON input file to perform **unit, integration, performance, and end-to-end testing** for the industrial software, enabling the software developers to continue their development process as the platform executes the tests concurrently
- The automated system completes **10 tests under 4 minutes** and extracts desired output information from the industrial software during the web automation process
- The system was recognized by multiple development teams of Acentury and serves as a software prototype to drive the AI based technical support platform
- Developed a single page application using **React and Express.js** to provide enhanced visuals for the user, allowing them to easily interpret the data as the platform dynamically renders the complex data structures within the JSON file
- The single page application executes the uploaded JSON file in the testing platform **without the command line interpreter** and displays the outputs to the user interface upon completion of the test
- The application allows users to modify the uploaded JSON file **through the user interface** and download an updated version of the JSON file to the local disk storage

GrantMatch

May 2022 – August 2022

Data Engineer, Co-op | Python, SQL, Pandas, NumPy, HTTP, Requests, lxml

Oakville, ON

- Created and implemented **over 50** web scrapers in Python using Scrapy, Selenium, and BeautifulSoup with **multithreaded design** to extract **semi-structured and unstructured data** from static and dynamic websites
- Received high satisfaction from the Marketing Director and Data Librarians as the scrapers contributed in speeding up the sprint planning and the marketing campaign
- Utilized Python Dash and Dash Bootstrap components to **maintain and design the user interface** of the data catalog web application
- 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

Chess Game | C++

December 2022

- Developed an **object-oriented** chess game utilizing the decorator and observer design patterns, as well as polymorphism concepts to implement movements for the chess pieces while ensuring encapsulation
- Designed **3 levels of AI** difficulties using a self-implemented Random Move Generator to perform random AI moves in player versus AI mode
- Utilized 2D vectors of pointers to perform dynamic memory allocation and deallocation

Steam Specials Scraper | Python, Pandas, BeautifulSoup, Requests, NumPy, JSON 🌐

May 2022

- Developed a bot to extract the name, original price, discount amount, discounted price, as well as the links to web pages of **all discounted games** on Steam
- Extracted data from the Steam Web API and utilized **parallel programming** concepts to speed up the program by **13** minutes
- Cleaned and transformed the data and outputted results into a CSV file with UTF-8 encoding

Personal AlgoBot | Python, Pandas, Matplotlib, Numpy, yFinance 🌐

November 2021

- Collaborated with a team of **3 developers** to develop an Algo-Trading Bot that creates a safe portfolio, intended to minimize risk and maintain portfolio value
- Designed the AlgoBot to consume a random CSV file containing any number of tickers and selects **20 of the safest stocks** for the formation of the portfolio
- Employed Jupyter Notebook, Pandas, Matplotlib, NumPy, and yFinance to dynamically code functions to provide calculations for beta, alpha, maximum drawdown, as well as analysis and data visualization on these factors