Joshua Hu

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Education

Bachelor of Engineering - Software Engineering	**McMaster University**	**Hamilton ON, CA**	Sep. 2013 - Jun. 2018

Professional Experience

Software Engineer & Data Analyst	QTSCM LLC. - Hamilton ON, CA	Sep. 2016 - Sep 2017

Software Engineering	**Python, pandas; C#**	**Live Market Trading Research Platform**

- Developed automated financial market trading platform and framework for the research, production, and verification of quantitative trading strategies operating in live market environments.
- Lead the design, implementation, and testing of the system while learning from and collaborating with colleagues and supervisors with domain expertise to deliver required platform features, creating a 50% increase in deployed strategies and a 200% increase in viable strategies.
- Implemented and tested novel and legacy features in production code base to ensure continuous operation of a $15 million trading pool.

Data Science	**Python, pandas**	**Dataset Analysis; Business Recommendations**

- Designed and implemented a data-analysis system to verify the quality of a news sentiment dataset of 14 million records.
- Developed statistical analysis processes to identify and yield critical information for the operation and development of trading strategies.
- Presented results of on-going statistical analysis, human insight, and process reviews as recommendations for business activities to executive officers on a bi-weekly basis.

Data Engineering	**Python, pandas**	**Dynamic Data-Stream Filter; Data Analysis & Storage Standards**

- Designed and implemented a filtering algorithm using a dynamic domain name whitelist to isolate significant trading signals in an aggregate data stream for use in trading strategies, which reduced data noise in the stream by 94%.
- Designed system and data standards for data-pipeline processes to reduce complexity of analysis for current and future data projects.

Software Engineer	McMaster University - Hamilton ON, CA	May 2016 - Aug. 2016

Full-Stack Web Development	**PHP; SQL; HTML; CSS**	**Web Application Design; Project Management; Business Automation**

- Designed the digitization and implemented the automation of the course permissions process for all undergraduate students in the Computing and Software department.
- Lead client interviews and updates while managing full project development cycle to deliver system used by the entire department.
- Taught myself basic web application programming using the LAMP stack as per the client requirements to deliver the project in 4 months.

Projects

Portfolio Website: jsrhu.github.io	**JavaScript, React; HTML**	**Project Portfolio - Web Application**

- Personal website to showcase projects of note as well as practice using different web technologies such as the React framework.

Eden	**JavaScript, React; HTML; CSS**	**Music Visualizer - Web Application**

- Music visualizer using WebAudio API for audio analysis and dynamic animation to represent activity in different frequency bands of a song.

Webscraper	**Python, selenium, pandas**	**Webscraper**

- Developed web scraping script for a commission to collection financial market information and save the data in a usable CSV file format.
- Used selenium in order to mainpulate the dynamic features of the website and learn more about DOM interaction and navigation

Capstone	**Python; C++**	**Automated Fire-Fighting Drone System**

- Lead team through the entirety of project development by planning development cycles and delegating tasks to members with synergetic strengths.
- Designed overall system architecture to integrate 2 different types of drones and a central server as well as to be scalable through modular and extensible system components.
- Researched and implemented fire detection systems using digital signal processing, computer vision algorithms and sensor data.
- Implemented rudimentary microcontroller routines to test the functionality of a custom designed and built drone.

McMaster Makers: Co-Founder	**C++, Arduino; Electronics, Circuit Design, Soldering; 3D Design, 3D Printing; 2D Design, Laser Cutting & Etching**	**University STEM Education Organization**	May 2018 - Sep. 2019

- Founded the first technical student organization at McMaster oriented to peer-to-peer education through the development of practical projects contextualized by solving human problems. For an adaptable electric shoe horn for seniors that increased the effective range and usefulness of the product designed by a project developer who volunteered at a nursing home.
- Worked with co-founder to conceptualize organization's value to the student and university community, functional goals and develop growth milestones, recruit founding team members at all levels, ratify the organization under the engineering department, and establish community partnerships and industry outreach.
- Designed organizational structure, charter, annual product development cycle, monthly project workshop execution schedule, and inter-club collaborations with the assistance of executive and technical teams
- Lead the development of commissioned projects from other student organizations as well as local businesses to deliver custom products not to satisfy unique customer needs.