

## 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

Live Market Trading Research Platform

Technologies: **Python2**, **pandas**; **C#**

- Developed automated financial market trading platform and framework to research, produce, and verify 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

Dataset Analysis; Business Recommendations

Technologies: **Python2**, **pandas**

- 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 **statistical analysis, human insight, process reviews, and business recommendations to executive officers** on a bi-weekly basis.

Data Engineering

Dynamic Data-Stream Filter; Data Analysis &amp; Storage Standards

Technologies: **Python2**, **pandas**

- Designed a filtering algorithm using a dynamic whitelist to isolate signals in a data stream for use in trading strategies, **reducing noise in the data stream by 94%**.
- Designed system and data standards to **streamline the data-pipeline and analysis processes of projects**.

*Software Engineer*

McMaster University - Hamilton ON, CA

May 2016 - Aug. 2016

Full-Stack Web Development

Web Application Design; Project Management; Business Automation

Technologies: **Linux**, **Apache**, **MySQL**, **PHP**; **HTML**, **Bootstrap**; **CSS**

- Designed 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 a department wide system**.

## Projects

*Portfolio Website: [jsrhu.com](http://jsrhu.com)*

Project Portfolio - Web Application

Technologies: **HTML**, **React**, **Material-UI**; **CSS**; **JavaScript ES6**

- Personal website to showcase projects of note and experiment with different web technologies.

*Eden*

Music Visualizer - Web Application

Technologies: **HTML**, **React**, **Material-UI**; **CSS**; **JavaScript ES6**

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

*Capstone*

Automated Fire-Fighting Drone System

Technologies: **Python2**, **OpenCV**; **C++**, **Arduino**

- Lead team through the project lifecycle by planning development cycles and delegating tasks to members with appropriate strengths.
- Designed system architecture to integrate 2 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 microcontroller routines to test the functionality of a custom designed and built drone.

*McMaster Makers: Co-Founder - University STEM Education Organization*

May 2018 - Sep. 2019

- Founded the first technical student organization at McMaster, oriented towards peer-to-peer education through the development of projects made practical and relevant by solving human problems found in the community.
- Worked with co-founder to: define and explain the organization's value to the student and university community, establish goals and 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 by other student organizations and local businesses to deliver custom products that satisfy unique customer needs.