Ray **Liu**

Software Engineering Undergraduate

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Education

McMaster University — *Hamilton, ON, Canada*

B.Eng in Software Engineering — *Sept 2016 - May 2020*

- GPA: 3.75 | Dean's honour list
- Relevant Courses: Data Structures and Algorithms, Software Design, Digital Systems and Interfacing, Computer Architecture, Linear Algebra, Discrete Mathematics I/II

Technical Skills

Programming Languages **Python, Java, C/C++, SQL, Javascript, MATLAB, LaTeX**

Tool and Frameworks **Git, Django, Tkinter, SQLite, Pandas, Tensorflow, Jupyter**

Experience

Taiwan Intelligence Service Company Ltd — *Tainan, Taiwan*

Intern — *May 2018 - Present*

- Designed and implemented a user interface for the AERMOD software (By EPA) using **Python Tkinter** that allows users to simulate dispersion of air pollutant emissions from stationary industrial sources with Google Earth.
- Implemented function that allows users to input or use data files to specify different sources, terrain and meteorology information for dispersion simulations
- Designed and implemented test plans and test cases for the user interface

Tribute Window Coverings — *Mississauga, ON, Canada*

Office Assistant — *July 2016 - August 2016*

- Assisted with invoice using QuickBooks and an integrated system between barcode scanners and Microsoft Excel
- Demonstrated organizational and communication skills through organizing company's operations

Projects and Courses

TrawlExpert

trawl.schankula.ca/Trawl/ — *2018*

- Developed a **Java** web application that provides research tools such as range searches, cluster map, plotter map, heat map and histogram to assist the analysis of the water ecosystems
- Implemented a k-dimensional (kd) binary search tree for fast (5-10ms) range searches over 280,000 entries
- Developed with: **Java, HTML, Javascript, Apache Tomcat, Google Maps API**

Greeco

http://greeco.tech/ — *2018*

- Developed a web application that allows user to rate location and create a visual 'cleanliness' overlay of their local surroundings by using **Python, Django, SQLite and Google Maps API**
- A crowd sourced approach to raise awareness in local communities to identify problematic areas and organize cleanup events
- Developed with: **Python, Django, HTML, Javascript, Google Maps API**

Machine Learning

Online course By Stanford University on Coursera — *2018*

- Used SVM to build spam classifiers
- Implemented the K-means clustering algorithm and apply it to compress an image
- Built a neural network to recognize hand-written digits