Ray **Liu**

Software Engineering Undergraduate

Toronto, Canada

(+1) 289-834-0879 | liuc40@mcmaster.ca | cherayliu.github.io | CheRayLiu | CheRayLiu

Technical Skills

Programming **Python** · **Java** · **C/C++**
Analytics **IPython (with NumPy, Pandas, Jupyter)** · **SQL** · **Excel**
Web/Others **HTML/Javascript/CSS** · **Django** · **Tkinter** · **SQLite**

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

Experience

Taiwan Intelligence Service Company Ltd *Tainan, Taiwan*

Software Engineer 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*

Intern *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