Ray **Liu**

Software Engineering Undergraduate

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Technical Skills

Language   **Python** · **Java** · **C/C++**· **Javascript**· **Ruby** · **HTML/CSS**

Analytics   **IPython (with NumPy, Pandas, Jupyter)** · **SQL**

Tools, Frameworks and Libraries   **Git**· **Ruby on Rails** · **Node.js**· **Express.js** · **Tensorflow** · **jquery** · **AWS** · **IBM DB2** ·**Django** · **Tkinter** · **SQLite**

Education

McMaster University   *Hamilton, ON, Canada*

B.Eng in Software Engineering   *Sept 2016 - April 2020*

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

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

Experience

Taiwan Intelligence Service Company Ltd   *Tainan, Taiwan*

Software Engineer Intern   *May 2018 - Oct 2018*

- 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

Projects

HeyTensor

                                                                                                                           2018

- Developed a **Deep Learning** web application that provides users a chatbot for entertainment purposes
- Trained model based on massive data from online forum (Reddit) comments using **Tensorflow** and developed application using **Node.js** with **socket.io**
- Developed with: **Python, SQLite, Tensorflow, Tensorflow.js ,Node.js, Express.js, socket.io, jquery**

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 (RU Hacks)

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**