

# RayLiu

SOFTWARE ENGINEERING UNDERGRADUATE

Toronto, Canada

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## Technical Skills

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

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

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

## Education

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### 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

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### Taiwan Intelligence Service Company Ltd

*Tainan, Taiwan*

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*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

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### 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**

### Greco (RU Hacks)

HTTP://GRECO.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**