

ALYSSA ZHANG

aspiring data scientist

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SKILLS

Languages: Python | R | SQL | C | C++ | HTML/CSS | JavaScript | Pandas, NumPy, Matplotlib, SciPy, SciKit-learn | Keras & TensorFlow

Technologies: Power BI | Oracle SQL Developer | Jupyter Notebook | RStudio | Apache Hadoop & Spark | IBM Watson | Git | Linux

Soft Skills: Systematic | Committed | Innovative | Adaptable Self-Learner | Excellent Verbal and Written Communicator

PROJECTS

TWITTER STATISTICS ([GitHub](#))

- Performed **data mining** on Twitter for trending topics via **Python Tweepy** and the **Twitter API**
- Conducted **data munging** and used **natural language processing** techniques for exploratory analytics and insights in a word cloud
- Implemented **object-oriented programming** to collect live tweets related to the COVID-19 vaccine; displayed their locations on an interactive map via **MapQuest Geocoding API**
- Retrieved tweets as **JSON** objects and stored in a **MongoDB** database to display user information and activity on an interactive choropleth map

FORECASTING WEATHER AND HOUSING PRICES ([GitHub](#))

- Estimated past and predicted future temperatures using **time-series analysis** on NOAA's weather data
- Implemented **simple linear regression** two ways: **Python SciPy** and a **SciKit-learn machine learning estimator**
- Generated sophisticated house price predictions with 8-variable **multiple linear regression** on California Housing dataset

MNIST DIGITS ([Github](#))

- Trained and tested a model for predicting handwritten digits (from MNIST database) using **k-nearest neighbors algorithm**
- Measured and evaluated model accuracy with a **confusion matrix**, **classification report**, and **k-fold cross-validation**
- Performed **dimensionality reduction** and visualization with **Python Scikit-learn** and **Seaborn**
- Built a **convolutional neural network** (CNN) that executed probabilistic classification of digits using **Keras** and **TensorFlow**
- Visualized CNN with **TensorBoard** and evaluated incorrect predictions

COVID-19 DASHBOARD ([Github](#))

- Prepared data and visualized COVID-19 statistics around the world on an interactive MS **Power BI** dashboard

VOLUNTEER EXPERIENCE

MAIN INFORMATION DESK

Mississauga Hospital (Trillium Health Partners) | 2019-2020

- Utilized patient database to locate patients, applied active listening and customer service skills to answer inquiries (in-person and phone), created clear and concise verbal and written directions, leveraged resources to assist in wayfinding and deliveries
- Trained **3** new volunteers efficiently and comprehensively to increase productivity during peak visiting hours
- Took extra shifts in patient discharge, gift shop management, and water deliveries to patients; accumulated **160+** hours
- Facilitated water delivery to **100+** patients in **8** units

SWIM TEAM COACH

St. Francis Xavier Secondary School | 2018-2020

- Planned and designed training sets for **20+** swimmers, collaborated with individuals based on personal needs; organized, led, and mentored swimmers at meets; built strong and supportive relationships, brought passion and a team-focused culture
- Number of OFSAA medals (highest level of high school swimming) increased by **50%**

ACHIEVEMENTS

- **Governor General's Academic Medal:** Awarded to graduating student with highest cumulative grade 11 & 12 average (class of ~500)
- **Most Outstanding Student Award:** Presented to the graduating student who has contributed in an outstanding way to St. Francis Xavier Secondary School in areas of academics, athletics, leadership, and involvement in school activities (class of ~500)

EDUCATION

UNIVERSITY OF WATERLOO

BCS, Honours Computer Science (Co-op) | 2020-2025

- Relevant Courses: Algorithm Design & Data Abstraction (**93%**), Probability (**97%**), Statistics, Object-Oriented Software Development
- Varsity Swim Team – Athletic Financial Award recipient