

# Joseph Mok

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Portfolio: [hjmok.github.io/josephmok\\_portfolio](https://hjmok.github.io/josephmok_portfolio)

GitHub: [github.com/hjmok](https://github.com/hjmok)

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## Skills

**Languages:** Python, JavaScript, MATLAB, C++

**ML Libraries:** TensorFlow/Keras, PyTorch, Scikit-Learn, NumPy, Pandas, spaCy, NLTK, OpenCV, PySpark

**Databases:** MySQL, SQL

**Big Data:** Hadoop, Apache Pig, Apache Spark

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## Professional Experience

Yaya Foods Corp.

Toronto, ON

**Automation Engineer**, July 2019 – Present

- Developed data mining process that extracts PLC transmitter data, stores in MySQL database, and presents it to Client application designed in Python and Ignition Automation software
- Lead the automation design for several SCADA systems for beverage manufacturing clients by integrating Rockwell Automation PLCs/HMIs, Ignition, MySQL, and ethernet IP networks
- Determined root cause of production halts through strong troubleshooting skills for hardware and software

Apple Inc.

Cupertino, CA

**Recycling R&D Engineer Intern**, September 2018 – April 2019

- Designed semi-autonomous prototypes for optimal disassembly and recycling of Apple products. Designs continuously integrated feedback to improve operator ergonomics and meet California waste regulations
- Prototype resulted in a 90% increase in the Unit-per-Hour output compared to the current manual methods

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## Projects

**Breast Cancer Malignant or Benign Diagnosis**

[hjmok.github.io/josephmok\\_portfolio/#/BC](https://hjmok.github.io/josephmok_portfolio/#/BC)

- Applied Logistic Regression and K-Nearest Neighbor analysis using Scikit-Learn to a Breast cancer classification dataset with 32 columns of patient data
- Logistic Regression model achieved 98% accuracy and K-Nearest Neighbour achieved 97% accuracy

**Stock Prices Prediction**

[hjmok.github.io/josephmok\\_portfolio/#/StockPriceRNN](https://hjmok.github.io/josephmok_portfolio/#/StockPriceRNN)

- Created an RNN with LSTM model on Tensorflow to predict AMD and Google Stock prices by training on daily stock price data from May 2009 to August 2018.
- Resulting models were able to follow trend and scale of stock prices for quarterly and annual sequence sizes

**TFIDF Text Classification**

[hjmok.github.io/josephmok\\_portfolio/#/TFE](https://hjmok.github.io/josephmok_portfolio/#/TFE)

- Created a supervised learning model using Scikit-Learn to classify Positive/Negative reviews in an Amazon Reviews dataset and Ham/Spam text messages in an SMS dataset.
- Count vectorized each unique word in the training set, then applied Term Frequency-Inverse Document Frequency feature extraction. Used a Linear Support Vector Classifier to return the best fit hyperplane
- Achieved a 98% accuracy on the SMS dataset and 86% accuracy on the Amazon Reviews Dataset

**User Movie Rating Prediction with AutoEncoders**

[hjmok.github.io/josephmok\\_portfolio/#/AE](https://hjmok.github.io/josephmok_portfolio/#/AE)

- Created a Stacked AutoEncoder model to predict what rating a user will give to a film.
- Trained on a Grouplens dataset with 1 million rows of movie ratings from 6040 users across 3952 rows
- Achieved a train loss of 0.808 and test loss of 0.896, meaning every prediction is off by  $\pm 1$  star

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## Education

University of Waterloo,  
**Bachelor of Applied Science, Honours Mechanical Engineering**, Graduated June 2019