FRANK LIANG

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EDUCATION

University of Waterloo

Candidate for Bachelor of Applied Science in Computer Engineering (GPA: 3.8/4.0) – Graduation: April 2020

Relevant Courses: Cooperative & Adaptive Algorithms, Probabilistic Reasoning & Reinforcement Learning, Probability Theory & Statistics, Distributed Computing, Database Systems, Computer Networks

WORK EXPERIENCE

Software Engineer Intern | Salesforce   San Francisco, CA | Sept 2018 – Dec 2018

- Designed a self-tuning anomaly detection model using a Markovian methodology to extract abnormal substrings within unstructured loglines to generate daily reports used by database engineers to debug issues
- Utilized principle component analysis to obtain key parameters and optimized parameter values using stochastic gradient descent, maximum likelihood estimation, and ROC curves
- Evaluated models with precision and recall benchmarks and relative entropy of the expected results
- Filtered live input data from Splunk using Apache Phoenix and streamed data into Apache Hive for outlier detection using Median Absolute Deviation

Software Developer Intern | IBM Security Intelligence   Ottawa, ON | Jan 2018 – Apr 2018

- Architected and created a data-driven multi-cloud security analytics platform that analyzes trends in queried log sources and identifies potential threats and vulnerabilities
- Wrote REST API endpoints in Python Flask to query & filter VPC, EC2 logs from AWS through a data pipeline

Software Developer Intern | NexJ Systems Inc.   Toronto, ON | May 2017 – Aug 2017

- Integrated user-based contact suggestions based on Bayes' Theorem into the telecommunication services of the main customer relationship management product using Java/Scheme

Software Developer Intern | KPMG LLP   Toronto, ON | Sept 2016 – Dec 2016

- Independently created the first release of a Capital Markets data automation and analysis tool that data mines transactions from investment banks to generate reports and identify auditory issues using C#.net
- Designed SQL schemas, stored procedures, and scripts in MsSQL to process data from trade reports

PERSONAL PROJECTS

Vancouver Housing Price Prediction

- Created a neural network to predict the sporadic prices of real estate in Vancouver using live data mined from popular online real estate sites; created a robust scraper to mine relevant features
- Improved the performance of the NN with Keras by leveraging a regularized and well-fitted deep learning architecture to properly incorporate and normalize the quantitative and categorical data

Machine Learning Model Library

- Created a collection of Reinforcement Learning algorithms (Q-Learning, SARSA, etc.) and Optimization algorithms (such as Genetic Algorithms, Simulated Annealing, etc.) to be easily imported into ML projects

SKILLS

Languages: Python • Java • SQL • Scala • Matlab • C • C++ • JavaScript • HTML/CSS • Scheme • VHDL

Libraries: Apache Spark/Hive/Phoenix/Hadoop/Airflow/Kafka • keras • scikit-learn • numpy • scipy • pandas