Raymond Deng

✉ r6deng@uwaterloo.ca 🌐 www.raymonddeng.com ⌂ raydeng2007

EDUCATION

University of Waterloo
Bachelor's of Mathematics Honors Statistics (Co-op) 2020
Relevant Courses: Generalized Linear Models, Applied Probability, Databases, Markov Chains, Statistical Inference, Forecasting

EXPERIENCE

Data Scientist (Co-op)   *Redwood City*, *California*
Athos
- Built end to end fuzzy logic based activity classification model. Applying Daubechies wavelet transformation for noise removal and PCA for dimension reduction. Final model has precision of 87%.
- Implemented an automatic rep-detection model for EMG signals using LOESS smoothing, low pass Butterworth filter and continuous wavelet transform.
- Design and created POC backend architecture with time series database that significantly improves processing speed to near real time.
- Developed ETL data pipeline from AWS to visualize and transform EMG signal data, performed muscle activation sequence detection by using multivariate statistical analysis.

Machine Learning Engineer (Co-op)   *Toronto*, *Ontario*
ShopBonsai
- Developed recommendation engine using collaborative filtering that utilize high dimension, low-density user data.
- Trained custom Word2Vec, Doc2Vec models on in-app articles and applied cosine similarity between word embeddings to improve article recommendation system.
- Co-authored the implementation of a shared nearest neighbours classification algorithm based on a research paper for clustering high dimensional noisy data.
- Built various data pipelines using GCP and Kubernetes to continuously pull data from third-party merchants.

Fullstack Developer (Co-op)   *Waterloo*, *Ontario*
WalterFedy
- Developed the entire company's service portal from scratch using Django. The site is live on AWS Elastic Beanstalk and is used by 400+ employees.
- Setup automatic deployment system using Jenkins and Docker.
- Implemented multiple request and checkout systems and email notification servers as well as permission groups within portal.
- Integrated search functionality for cross-model searching across the app.

Software Engineer (Co-op)   *Toronto*, *Ontario*
TradeRev
- Developed live feature of email notification using AWS SQS service.
- Created mock API using AWS lambda functions to test developing feature.
- Integrated Support Tool to attach VRF forms to trade using Grails and Angular.

PROJECTS

Tweet Generation using LSTM
- Flask application that has an LSTM model with two hidden layers that use cross-entropy loss function and optimized with ADAM algorithm.
- The application uses web sockets to fetch live predictions asynchronously to increase prediction efficiency.

Conway's Game of Life
- A 'zero-player-game' built with React and Redux that imitates cellular automaton.
- The player will be able to change generation speed, grid size as well as generate pre-built patterns.

SKILLS

LANGUAGES & LIBRARIES: Python, R, Javascript, Java, SQL, GraphQL, Pandas, Numpy, Scikit-learn, Keras, TensforFlow, Beautiful Soup, PyTorch, Spark, SciPy
ML MODELS & OTHER TOOLS: Matrix Factorization, KNN, DBSCAN, SNN, LSTM, K Means, Tf-IDF, Word2Vec, Web Sockets, Django, Flask, Various AWS tools , Docker, GCP, Kubernetes, Git, Linux