Yun Han Xiao

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experience

Intact Financial Corporation - Data Lab | May - Aug 2018
Data Lab Intern | Montreal, QC

- Lead the design and development of a **data modeling pipeline**
- Built an internal library that reduced Cross-Validation run time by more than 5 folds using **sklearn and Dask**
- Integrated a **denoising auto-encoder** for preliminary feature selection on insurance premium data with **Pytorch**
- Re-factored a data modeling code base from R to Python
- Implemented a fault-tolerant and **load balanced infrastructure** using Docker Swarm.

Nuance Communications Inc. - R&D Division | May - Aug 2017
Software QA Intern | Montreal, QC

- Designed and wrote **Atutomated White Box, Black Box and Regression Tests** with **Java (JUnit)**
- Reduced overhead of load testing by around 15% by moving away from **JMeter** to a custom multi-threaded test framework
- Automated server configurations and pipelines for JUnit tests setup and teardown workflow on testing servers

Wedo Services | Jul-Oct 2016
Software Developer Intern | Montreal, QC

- Integrated quick quote feature that calculates surface area by coloring on a map to improve customer UX
- Designed and built a **chatbot** using Facebook's Messenger API that quadrupled customer convergence
- Improved a reactive front-end interfaces with **MeteorJS's two-way data binding's protocol (DDP)** over websockets.

projects

Machine Learning Baseball (M.L.B.) | Predicting MLB games

- Predicted home win probability given 2 teams and 2 roasters
- Aggregated historical data as vector with home/away players/team stats
- Perform supervised classification using a **support vector classifier** (SVM with Linear Kernel)
- Cross-validation with **Gridsearch**

Corny Volatility | Implied Volatility Analysis on Corn Futures

- Analyzed the effects of the WASDE report on the implied volatility of corn futures.
- Built a **real-time data pre-processing pipeline** using Interactive Brokers' API in C++ with **Apache Kafka** for low-latency message processing to compute implied volatility.

Magic Portfolio | Deep RL Portfolio Optimizer

- Reproduced paper by Jiang et al. on financial portfolio optimizer
- Built a **deep reinforcement learning** agent using **Keras** and data from Poloniex API.
- Predicted a vector of weights to m instruments in portfolio for optimized performance.
- Used a **CNN** of 3 dense layers with **Gradient Descent** Optimizer.

preferred tools

Python • C/C++ • R •Javascript
Docker (Swarm)• Java • Apache Kafka
SciPy/Numpy/Pandas • Tensorflow
MongoDB • SQL • Apache Zookeeper
PySpark • Hadoop • TCP/IP • Nginx
ARM Assembly (RISC) • VHDL

education

University of Waterloo
B.Sc in Software Engineering, minor in Computational Mathematics
Class of 2017-2022, Waterloo, ON

- UW Data Science Club
- UW Poker Studies Club
- Mathematical Finance Club

achievements

• 2015 - **Private Pilot Licence** : One of the 65/3000 candidates chosen; Obtained bursary Transport Canada Private Pilot Licence at age of 17
• 2014 - **Glider Pilot Licence:** Obtained bursary for Transport Canada Private Pilot Licence at age of 16

coursework

Industry Relevant
Introduction to Optimization
Data Abstraction & Implementation
Sequential Programming
Digital Computers
Linear Circuits
Digital Circuits

Self-paced book/online
Elements of Statistical Learning;
Data Science: Probability (HavardX);
Intro to Machine Learning (Udacity);

activities

Leisure
Playing Poker • Nature Canoeing • Flying Glider and Cessnas
Community
Co-founded a non-for-profit organization to help raise awareness of Kawasaki Syndrome, a rare autoimmune disease that affects kids.