Zac Tang

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EDUCATION

Cornell University, College of Engineering, New York, NY **Sep 2019 – Dec 2020**
Master of Engineering in **Financial Engineering**, Financial Data Science Certificate Candidate, **GPA: 3.88/4.0**

New York University, The Courant Institute of Mathematical Sciences, New York, NY **Sep 2015 – May 2019**
B.A. in **Computer Science**, B.A. in **Mathematics**, **GPA: 3.6/4.0**

- ***Selected Coursework:*** Algo Trading, Fixed Income, Options, Black-Scholes Model/Greeks, Risk Evaluation, Monte Carlo, Optimization, Machine Learning, Deep Learning, Big Data, Object Oriented, Database, Software Engineering

SKILLS & CERTIFICATES

- **Programming Languages**: Python (4 yrs), Java (5 yrs), C/C++ (4 yrs), R, Matlab, Go
- **Cloud and Database**: AWS, Azure, SQL (PostgreSQL, MySQL), MongoDB, Excel
- **Web Development**: RESTful API, HTML, CSS, JavaScript, React.js, Node.js
- **Certificates**: CFA level 1

EXPERIENCE

Intern: Reinforcement Learning Researcher, *Research Sponsor: UBS*, New York, NY **Sep – Dec 2020**
Highlights: Python, ML, Neural Nets, Object-Oriented Design, Papers, Visualization, Backtesting

- Applied **reinforcement learning** (Q-learning and Neural Networks) to high frequency market data to maximize profits
- Developed hypothetical test data using different statistical models based on prior assumptions
- Streamlined **ML** algorithms such as Naïve Bayes, Decision Trees, KNN and Random Forests to analyze features
- Developed **visualizations** such as 3d-plots, heatmaps and animated plots for monthly presentations
- **Backtested** optimal strategy on real data after successfully creating profitable traders in the simulated environment

Intern: Quantitative Developer, *Wisdom Capital Asset Management,* New York City, NY **May – Aug 2020**
Highlights: Python, Bloomberg, Data, Statistics, Black-Scholes, Statistics, Papers

- Focused on analyzing, developing, and backtesting a variety of trading strategies
- Developed risk models and risk-neutral-density stock price forecasts based on short maturity option volatility smiles
- Built proficiency in several data sources, such as **Bloomberg, Option Metrics** and **CBOE**
- Organized and cleaned multiple sets of time-series data for **backtesting** in **Python**

Intern: Global Markets Summer Analyst, *Société Générale Bank,* Beijing, China **May – Aug 2018**
Highlights: Excel, VBA, Bloomberg, Presentation

- Developed **Excel macros** to process and visualize daily data changes, and synthesized stock data, trading data and client account balances from different departments to support senior management
- Priced LIBOR based swaps and options with **Bloomberg**, designed pitch books, and created **presentations** for clients
- Verified **data** integrity after software upgrades of the bank's core system and data transfer between databases

PROJECTS

Portfolio Optimization, *Cornell University*, Ithaca, NY **Feb – May 2020**
Highlights: Matlab, Python, Optimization, Momentum, Backtest,

- Constructed a trading strategy based on **momentums** and portfolio **optimization** and proved stability via backtesting
- Applied RSI, quantile trading to select stocks, and developed a dynamic Markowitz optimized portfolio
- **Backtested** strategy over a 10-year horizon and beat the benchmark annual return by an average of 40%

Project: Modelling with Machine Learning, *New York University,* New York, NY **Feb – May 2019**
Highlights: Python, ML, SQL, Analytics

- Classified stocks from NASDAQ-100 using **ML algorithms** in **Python** to differentiate high-performance stocks
- Preprocessed data through TA-Lib library by generating features, and queried stocks with stable alpha using **SQL**
- Grew a Random Forest classifier with 100 decision trees and 6 splitting features and analyzed multiple simulations to prove stability of model, and achieved an average monthly annualized return of **16%**