GENG (ALEX) YAN

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EDUCATION

NEW YORK UNIVERSITY New York, NY
The Courant Institute of Mathematical Sciences GPA: 3.9/4.0
MS in Mathematics in Finance (September 2018 – January 2020)

- ***Coursework:*** Black-Scholes, Greeks, derivatives pricing, measure change, Monte Carlo, PCA, curve building, local volatility, Hull-White model, data analysis, statistical learning

NANJING UNIVERSITY Nanjing, Jiangsu
BS in Mathematics (2014-2018) GPA: 4.5/5.0

- ***Coursework:*** Analysis (complex, real and functional), algebra and representation theory, ODE, PDE, topology, differential geometry, statistics, numerical analysis, data structures and algorithms
- ***Awards:*** First Prize in Chinese Mathematical Olympiad in Senior

EXPERIENCE

BITMART New York, NY
Quant Intern (Sept. 2019 – Jan. 2020)

- Built a whole market-making system for crypto-currency exchanges in Python framework
- Developed a trading strategy that have 270% annual return and 3.04 Sharpe ratio in Bitcoin market by backtesting about 1.5 million ticks of historical k-line data

HIFI TECHNOLOGY New York, NY
Financial Engineer Intern (May 2019 – Aug. 2019)

- Applied modern time series models ARIMA and seasonal decompose to predict users' next year income, and the overall back-tested accuracy achieved 76%
- Trained RNN and LSTM for time series prediction, and the back-tested accuracy reached 79%
- Built an automatic system to select useful part of data, the best model and parameters

PROJECTS

NEW YORK UNIVERSITY New York, NY
Deep Learning Method for Solving Differential Equations (Python, Tensorflow & Keras)

- Used fully connected neural networks to train the gradient functions of each discretized timestamp, and solved the backward stochastic differential equations by following the scheme of Feyman-Kac
- Applied this framework to determine prices of 100 dimensional European options, greatly accelerated the computational speed compared to traditional finite difference method

Derivatives Pricing and Model Fitting (Java & Python)

- Built generic Monte Carlo pricing framework for European, Asian options and other exotics, and improved this framework by using Middleware, OpenCL and multi-threading
- Applied importance sampling and other techniques to significantly reduce the variance
- Priced barrier options using trinomial tree and finite-difference scheme relatively
- Calibrated SABR model with FX spot and interest rates curves using market convention

NANJING UNIVERSITY Nanjing, Jiangsu
Machinery Fault Detection for Imbalanced Datasets based on Deep Learning (Python)

- Initiated idea of using CNN to extract features and EasyEnsemble.M to train imbalanced datasets
- Trained data to classify them into three different classes and compared with several algorithms
- Designed experiment to show its superiority for imbalanced datasets, and the accuracy reached 99.85% and 97.14% in bi-classification and multi-classification

COMPUTER SKILLS/OTHER

Programming Skills: C++, Java, Python, Tensorflow, SQL, R
Programming Awards: National First Prize in National Olympiad in Informatics in Provinces (NOIP)