RUNKUN (VINCENT) XIE

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EDUCATION

Columbia University **Sep 2018 – Feb 2020**
Master of Arts in Mathematics of Finance, GPA: 3.92/4.00 New York, NY
- **Coursework**: Non-linear Option Pricing, Derivatives Trading, Fixed Income, Financial Risk Management, Deep Learning

Central University of Finance and Economics **Sep 2014 – Jun 2018**
Bachelor of Economics in Financial Engineering, with Distinction, GPA: 3.87/4.00 Beijing, CN
- **Coursework**: Differential Equations, Multivariate Statistics, Optimization, Algorithms, Corporate Finance, Econometrics

University of Michigan **Jul 2016 – Aug 2016**
Summer Program in Quantitative Methods of Social Research, GPA: 4.00/4.00 Ann Arbor, MI
- **Coursework**: Advanced Time Series Analysis, Simultaneous Equation Models, Regression Analysis

EXPERIENCES

Wisdom Capital Asset Management **Nov 2019 – May 2020**
Quantitative Analyst Intern (Python, VBA) New York, NY
- **Quant Analytics**: processed daily data of 31 underlying assets using Python, built and maintained VBA models for the auto-analysis of the underlying assets, calculated technical indicators, return dispersions, and other statistics
- **Quant Trading**: executed commodity futures options trading strategies, paper traded Iron Condors, Vertical Spreads and Strangles on 4 commodity futures, monitored portfolio risk and performance, and assisted in strategy presentations

Huatai Securities (China's top 4 investment bank) **Jun 2019 – Aug 2019**
Quantitative Researcher Intern (Python, SQL) Beijing, CN
- **Strategy Development**: refined the company's Cyclical Asset Allocation Strategy (by investment timing, weight adjustment, and risk control), tested parameter sensitivity, and improved its Sharpe Ratio from 1.44 to 1.86
- **Quant Modeling**: extracted cyclical information from asset signals by MUSIC algorithm and Fourier Transform, synthesized asset signals and generated cycle factors on certain frequencies using SUMPLE algorithm
- **Machine Learning**: applied Random Forest to the Asset Allocation Strategy, estimated the non-linear relationship between the Year-Over-Year return of major assets and Cycle Factors, and increased prediction accuracy by 5%

China Galaxy Securities **Feb 2018 – Jun 2018**
Quantitative Researcher Intern (Python, SQL) Beijing, CN
- **Quant Development**: implemented a vectorized back-testing system for strategy development using Python OOP, built a market- and sector-neutral multi-factor strategy under Barra framework, and achieved 2.09 Sharpe Ratio
- **Quant Modeling**: extracted millions of data from database using SQL, generated factors using PCA, estimated factor return by Cross-sectional Regression and GARCH model, and optimized portfolio weights using Convex Optimization
- **Machine Learning**: applied a K-NN based outlier detection method to identify market manipulations

Jindian Investment **Jul 2017 - Sep 2017**
Quantitative Researcher Intern (Python, SQL) Beijing, CN
- **Quant Development**: built a for-loop back-testing system that interacted with SQL databases and WIND API using MATLAB, implemented trading strategies based on multi-factor selection model and dual thrust strategy
- **Strategy Development**: tested trading signals for stock selection and market timing, improved strategy performance by signal blending portfolio blending, tuned parameters based on various risk preferences, and yield a Sharpe Ratio of 1.75
- **Machine Learning**: applied and tested the performance of Support Vector Machine in the stock selection process

PROJECTS

Multi-digit Number Recognition using Deep Convolutional Neural Networks, *Columbia University* **Oct 2019 – Dec 2019**
- **Deep Learning**: built a 11-layer Convolutional Neural Networks under DistBelief framework to recognize multi-digit numbers from satellite imagery, applied regularization and data augmentation to boost the test accuracy to 86.02%

Non-linear Option Pricing, *Columbia University* **Feb 2019 – May 2019**
- **Derivatives Pricing**: priced American Options using Longstaff-Schwartz and TVR methods, optimized portfolio based on HJB equation and Backward SDE, and estimated Implied Volatility by Stochastic Local Volatility model

SKILLS & INTERESTS

- **Programming Skills**: Python, C/C++, SQL, MATLAB, VBA
- **Data Science & Machine Learning Libraries**: NumPy, Pandas, SciPy, Matplotlib; Scikit-Learn, TensorFlow, PyTorch
- **Tools & Software:** Git; Linux; MySQL, MongoDB; Bloomberg, Capital IQ; Spark; Tableau; AWS
- **Certificates & Associations**: CFA Level II, FRM Level I; Quant Analyst at Columbia Quant Group
- **Interests**: Tennis, Jogging, Guitar, Gomoku