YUNXIAO XIANG

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EDUCATION

New York University, The Courant Institute of Mathematical Sciences New York, NY
M.S. in Mathematics in Finance; Current GPA: 3.8/4.0 Dec. 2020

- ***Coursework:*** martingales, Monte Carlo, local volatility, SVI, Brownian motion, Black-Scholes, VaR, Greeks, Itô lemma, GARCH, cross-validation, LSA, LDA, random forest, Kalman filter, boosting

University of California, San Diego La Jolla, CA
B.S. in Applied Mathematics; B.A. in Economics; GPA: 3.8/4.0 Jun. 2019

- ***Coursework:*** Markowitz model, CAPM, arbitrage pricing theory, factor model, hypothesis test, ODE, bootstrap, MLE, CLT, SVD, PCA, regression, ACF, ARIMA model, backtesting, heat equation, GA

EXPERIENCE

Axiomquant Investment Management, LLC HQ: Beijing, CN
Quantitative Research Intern (Remote in New York) Jul. 2020 – Sep. 2020

- Processed 5 years' auction, close, market data to extract 132 intraday, cross-date, cross-stock features
- Leveraged LRU cache to optimize repetitive function call, multiprocessing to parallelize computation
- Built OLS, Ridge, and elastic net to predict future returns; selected significant features by out-of-sample liquidity-weighted correlation, rolling cross-validation, Sharpe and PnL of prediction-based portfolio
- Backtested daily rebalanced portfolio on test set; achieved correlation of 0.087 and excess Sharpe of 1.57

RavenPack New York, NY
Summer Research Project Leader (Mentors: Ricard Matas, Peter Hafez) Jul. 2020 – Sep. 2020

- Filtered for novel events based on sentiment score; visualized distance between events and analyst ratings
- Leveraged Bayesian approach to compute P (analyst rating change | event X happened in Y days) for each (X, Y, entity); checked event volume, probability distributions and significant ratios for subset selection
- Implemented XGBoost to forecast analyst rating events; tackled imbalanced labels by oversampling
- Constructed signals to build event-driven portfolio; evaluated prediction power and portfolio metrics

Ubiquant Investment Co., Ltd. HQ: Beijing, CN
Data Analyst Intern (Remote in New York) Apr. 2020 – Jul. 2020

- Implemented Almgren's impact model to estimate implicit cost of trades size up to 10% of market volume
- Processed TAQ data to efficiently generate model inputs – volume time, execution details, volatility, etc.
- Leveraged non-linear Gauss-Newton optimization and regression to fit impact coefficients and exponents
- Incorporated trading impact in backtesting strategy to compute more realistic Sharpe (from 4.38 to 3.53)

Black Wing Asset Co., Ltd. Shanghai, CN
Summer Investment Analyst Intern Aug. 2018 – Sep. 2018

- Discovered 6.3% loss in small-cap market simulation; customized strategy by incorporating implicit cost
- Implemented momentum strategy with MA, MACD indicators, improved clients' portfolio returns by 5%

PROJECTS

S&P500 Dispersion Trading – NYU Capstone Project in Python (Mentor: Sebastien Bossu)

- Estimated implied dividend of S&P500 component stocks by put-call inequality of American options
- Calibrated SVI volatility surfaces for 15 years to price variance swaps; constructed zero-cost dispersion portfolio and plotted PnL; computed variance-implied correlation and compared with realized correlation

Deal Probability of Russian Commodities – NLP in Python and Multivariate Regression in R

- Leveraged NLP to extract numerical variables from descriptions and images; visualized sample attributes
- Built logistic regression after subset selection to model skewed deal probability with over 50% zeroes
- Conducted hypothesis test to find variable significantly influence probability; presented findings in report

Path-dependent Options Pricing – Monte Carlo, Numerical PDE, and Analytical PDE in Python

- Leveraged Implicit Euler Scheme, Monte Carlo, analytical PDE solution to price down-and-out options

COMPUTER SKILLS/OTHER

Programming Languages: Python (5 years), Java (5 years); R, Excel, MATLAB (2 years); SQL (1 year)
Languages: Mandarin (native), English (fluent), Japanese (basic)