YUCONG (PATO) SHAN, FRM

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EDUCATION

Expected 12/24 **NEW YORK UNIVERSITY** New York, NY
The Courant Institute of Mathematical Sciences
M.S. in Mathematics in Finance
- ***Expected Coursework:*** Black-Scholes, Fama-French, financial computing, Monte Carlo, Ito's lemma, risk-neutral valuation, risk and portfolio management, volatility and interest rate models

09/18 - 12/22 **SHANDONG UNIVERSITY** Jinan, China
B.S. in Financial Mathematics
- ***Coursework:*** calculus, linear algebra, ODE/PDE/SDE, probability, complex analysis, real analysis, measure theory, numerical analysis, optimization, stochastic process, econometrics
- ***Honors/Awards:*** Graduate with Honors (5%); Athletic Excellence Scholarships; MCM finalist

EXPERIENCE

06/23 - 08/23 **MORGAN STANLEY HUAXIN FUND** Beijing, China
Asset Management Intern (Python, C++)
- Applied Python to research options volatility hedging strategies using Heston, SABR model, finite difference, trees and Greeks; wrote report about methods comparison and error analysis
- Reconstructed historical order trading micro-process and built automated daily reporting pipeline in production environment to provide trading visualization and performance analytics
- Designed simulation framework that integrated multi-factor models and calibrated currency proxy to research existing orders and experiment on new intra-order algo switching strategies
- Computed 5-day 99% VaR for portfolios with 8 methods; applied t-copula and KMV models to predict probability of default, and simulated stock returns to evaluate potential loss
- Built machine learning and statistic models such as random forest, PCA, SVD and GLM to predict LGD; executed models on different timeframes to determine predictive power

12/22 - 06/23 **Ernst & Young (EY)** Beijing, China
Risk Modeling Analyst Intern (SQL, SAS, JAVA)
- Wrote SAS and Java OOP code, stream, and thread to automatically build data tables, increasing efficiency by about 360%; performed SQL procedures to create 300+ tables with 16K+ attributes
- Made queries using SQL window functions, and refined overdue payment collection strategies
- Initiated spatial econometrics model to monitor high moment risks of card holders and to mitigate anti-fraud risks using vintage analysis, IV 2SLS, A-B test and DID model

PROJECTS

09/23 - 12/23 **NYU COURANT** New York, NY
Hedging Simulations and Volatility Strategy Analysis
- Analyzed distribution of asset returns, volatilities, and correlations among major equity indices
- Priced options using BSM as well as Monte-Carlo GBM with 3-month LIBOR and DJIA index
- Simulated butterfly to compute assets' implied density and used kernel regression to smooth data

12/21 - 06/22 **SHANDONG UNIVERSITY** Jinan, China
Carbon Emission Pair Trading Strategy
- Refined co-integration and univariate time series models with MATLAB to analyze ORIF curves; performed ACF, PACF and stationary tests; optimized portfolio using 6 performance measures
- Predicted carbon price with 0.82 out-sample R^2 based on convertible bonds arbitrage

COMPUTATIONAL SKILLS / OTHER

Programming: Python, C++, Java, MATLAB, SQL, SPSS, LaTex, Excel, R
Languages: English (fluent), Mandarin (native)
Certification: FRM, CFA Level II Candidate, NCRE Level II (Access Database, Python, Microsoft)
Interest: Soccer (Captain of gold-medal winning undergraduate team)
Activities: TA, Recitation Leader: Calculus III at NYU Courant, and Probability and Math Statistics at SDU