YICHAO (ZACK) YANG

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EDUCATION

Expected 12/23 **NEW YORK UNIVERSITY** New York, NY
The Courant Institute of Mathematical Sciences
M.S. in Mathematics in Finance
- ***Coursework:*** Java OOP, risk and portfolio management, data-driven modeling, stochastic calculus, machine learning, algorithmic trading, option pricing, active portfolio management

08/17 - 06/21 **SUN YAT-SEN UNIVERSITY** Guangzhou, China
B.S. in Information and Computing Science
- ***Coursework:*** linear algebra, multivariate calculus, probability, statistics, ODE, PDE, numerical methods, optimization, operating systems, database (SQL), programming (C, C++, Python)
- ***Honors:*** first class scholarship (top 5%)

EXPERIENCE

06/23 - 08/23 **MARKETAXESS** New York, NY
Quantitative Research Intern (Python, SQL)
- Conducted statistical tests to evaluate if order imbalance is strong predictor of future price moves in US High-Grade bond market, leveraging firm's data products (Tradability and CP+)
- Built pipeline to assess Tradability skewness' predictive power for future CP+ moves, considering various features including different times of day and liquidity levels
- Found that Tradability skewness effectively predicts CP+ move directions under certain conditions, with 57% accuracy on 200k data points and 70% accuracy for overnight predictions

12/20 - 06/22 **SUNSHINE QUANTITATIVE INVESTMENT** Shenzhen, China
Quantitative Researcher (C#, Python)
- Developed AI/ML research framework to facilitate equity, commodity, and digital currency research; this became standard tool employed by firm's research team
- Applied framework to train models to forecast equity and commodity returns; automated model predictions, generated signals for live trading and monitored model performance
- Managed 3 trading servers; conducted quantitative development, enhancing firm's trading system

08/20 - 11/20 **FUTU HOLDINGS** Shenzhen, China
Quantitative Research Intern (Python, SQL)
- Collaborated on launch of Futu Elephant FOFs; developed performance/risk analysis algorithm to calculate and display metrics (e.g., net worth, annual return, max drawdown, Sharpe ratios)
- Developed trading strategy based on return volatility of ETFs, which had annualized return of 19.1% (2012 - 2020) and beat equally weighted benchmark by 5.7% per year

PROJECTS

02/23 - 03/23 **NYU COURANT** New York, NY
Algorithmic Trading & Market Microstructure (Python)
- Created 3 covariance matrix estimators and assessed their performance using real-world data
- Performed mean-variance optimization at different times and checked portfolio turnover
- Implemented Almgren's market impact model to estimate implicit cost with Trade and Quote (TAQ) data, and performed non-linear regression for impact coefficients

02/23 - 03/23 **SUN YAT-SEN UNIVERSITY** Guangzhou, China
Financial Engineering Program at Southern China Center for Statistical Science (Python, C#)
- Researched TD (Tom DeMark) sequential and TD combo indicators, implemented modified TD indicators that turned out to fit Chinese market better, and devised strategies for trading ETFs
- Implemented Hidden Markov and Random Forest models to predict future trends of SSEC Index

COMPUTATIONAL SKILLS / OTHER

Programming Languages: Python, SQL, C#, Java, MATLAB, C++
Languages: English (fluent), Mandarin (native)