Mengzhou (Jojo) Tang

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EDUCATION

New York University, Tandon School of Engineering — **Brooklyn, NY**
Master of Science in Financial Engineering — 09/16-05/18
GPA 3.64/4.00

University of Illinois, Urbana Champaign — **Champaign, IL**
Bachelor of Science in Applied Mathematics — 08/13-05/16
GPA 3.71/4.00

PROGRAMMING, TECHNICAL & LANGUAGE SKILLS

- Python (4yrs+), Java (e-trading applications), C++, SQL, Kdb (limited), AWS glue, lambda and cluster
- Statistical Machine Learning, Big Data Computation, Data Structures, Design Patterns, ETL
- English (bilingual proficiency), Mandarin (native speaker), Russian (elementary)

COURSEWORK HIGHLIGHTS

- **Quantitative Finance**: Active Portfolio Management, Statistical Arbitrage, Algorithmic Trading and High Frequency Strategies, Fixed Income Quant Trading, Market Microstructure, Econometrics & Time Series Analysis, Extreme Risk, Real Time Trading Risk Management, Stochastic Calculus, Quantitative Methods in Finance
- **Computer Science**: Data Structure, Numerical Methods (advanced), Financial Computing
- **Mathematics**: Number Theory (honors), Combinatorics(honors), Abstract Algebra, Complex Analysis, Differential Equations

EXPERIENCE

Jefferies — **New York, NY**
Data Science Analyst in Fixed Income Trading — 02/18 - Now

- Research on treasury market microstructure to provide trader feedback on market liquidity, price impact, and potentials to adjust
- Interpret business need and utilize machine learning algorithms to perform post trade analysis focusing on algo trading perspective (sample projects: neural net off-policy learning on real time pricing, client behavior classifier)
- Collaborate with credit trading desk quant and traders on cross rates-credit trace data analytics
- Collaborate with AWS engineers and management on the design and implementations of US & UK Fixed Income data lake
- Build E-trading applications per business need in java

Bayesquare Foundation — **New York, NY**
Leading Quantitative Developer/Researcher intern — 05/17 - 08/17

- Researched on the long-term mean reversion properties of FX trading and ways of utilizing frequency difference to gain spread
- Provided tailored trading signal optimization, factor effectiveness testing, and risk control module for FX client

RESEARCH & PROJECTS

Self-initiated Projects and School Projects (solo only)

Portfolio Optimizations

- Implemented unconstrained Markowitz optimization considering linear impact of trading, studied variance due to alpha, non-alpha, and idiosyncratic factors. Further performed Black-Litterman optimization on top of optimal prior
- Implemented estimation of factor loadings viewing factor return process as Linear Mixed Effects model

Fixed Income Projects

- Developed real-time (2ms delay) dynamic gaussian process forecasting of directional yield curve movement, at 63% accuracy
- Modeled Eurodollar futures rate using 1, 2-factor Vasicek and Ho-Lee correspondingly, reduced collinearity by ridge regression
- Construct pairs trading by Box-Tiao constructed cointegrated treasury pairs and fitted best alpha for AR forecasting model

Machine Learning Projects

- Designed single asset Q-learning robot learning to exploit arbitrage opportunities in price movements, annualized Sharpe 3.71
- Implemented Recurrent Neural Network from scratch in python using a Garch-like framework modeling variance of rewards, tested on all SP500 stocks 60 days out of sample and achieved lowest MSE 5.6

Mean-reverting and Momentum Strategy on Gold Trading [intraday]

- Captured optimal entry and exit points' technical characteristics (volatility, RSI) by in-sample data training
- Compared GARCH, Recurrent Neural Network based on ARMA, and other Stochastic Volatility models for better forecasting

C++ Projects

- Pricing of European, American, and look-back options
- Image Processing using K-d tree and Quad tree

HONORS & AWARDS

- Overall 1st Place Team, team lead; US University Trading Challenge
- 2nd place in ETF trading, Overall top 15 among 60 schools, team lead; Rotman International Trading Competition
- James Scholar, University of Illinois at Urbana Champaign, 2013-2016

EXTRACURRICULAR

- Associate Director of Marketing, Princeton Quant Trading Conference; Vice President of Industry Liaison, NYU Finance Club
- Putnam Training Team, and Matrix Mathematics Club in University of Illinois, Urbana Champaign