YANG BAI

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EDUCATION

Expected 01/24 **NEW YORK UNIVERSITY** New York, NY
The Courant Institute of Mathematical Sciences
M.S. in Mathematics in Finance
- ***Expected Coursework:*** stochastic calculus, statistical inference, machine learning, time series analysis, portfolio optimization, derivatives pricing and hedging, financial data science

09/18 - 07/22 **FUDAN UNIVERSITY** Shanghai, China
B.S. in Mathematics
- ***Coursework:*** partial differential equations, game theory, Brownian motion, optimal control theory, convex optimization, computational statistics, numerical analysis, mathematical finance

EXPERIENCE

06/23 - 08/23 **TCW GROUP** New York, NY
Quantitative Analyst Intern, Emerging Markets Equities Group (Python)
- Extracted data from Bloomberg using BQL query; constructed database of 95 predictive factors - updated automatically each month for emerging markets stock pool
- Implemented neural network model to interpret monthly returns with predetermined factors
- Constructed portfolio that achieved 1.17 annualized Sharpe ratio (transaction cost considered)

09/21 - 11/21 **GUOTAI JUNAN ASSET MANAGEMENT** Shanghai, China
Quantitative Analyst Intern, Proprietary Securities Department (Python)
- Analyzed macro movements of gold price from macroeconomic perspectives
- Established cointegration relationship between gold price and US CPI and specified Error Correction Model to describe short-term adjustment after deviating from long-term equilibrium
- Used Dynamic Factor Model to pick 10 out of 6000 latent factors to nowcast trend of gold price

05/21 - 08/21 **EVERBRIGHT SECURITIES** Shanghai, China
Quantitative Analyst Intern, Financial Engineering Group (Python)
- Added ESG factor into Fama-French 5 factor model and back-tested strategy performance; concluded that ESG factor consistently provides excess returns from A-shares
- Decomposed ESG rating divergence into distributions of measurement, weight and scope
- Integrated ESG into CAPM model by reforming utility function; arrived at optimal portfolio

PROJECTS

10/22 - 12/22 **NEW YORK UNIVERSITY** New York, NY
Exotic Option Pricing with Monte Carlo Simulation
- Derived 3-dimensional stochastic process to simulate movement of Nikkei-225 index, forward rate and risk-free interest rate, using HJM framework, Hull-White and Vasicek models
- Extracted historic trading data with FRED API; performed data cleaning and transformation
- Calibrated mean reversion coefficient in Vasicek model with Levenberg-Marquardt algorithm

02/21 - 10/21 **FUDAN UNIVERSITY** Shanghai, China
Application of Convolutional Neural Network in Yield Surface Prediction
- Defined yield surface of corporate bonds by adding credit rating dimension to yield curves
- Applied convolutional neural network to predict yield rates with predetermined maturities yield 1 week into future; achieved higher accuracy than that of Nelson-Siegel model

COMPUTATIONAL SKILLS / OTHER

Programming Languages: Python, MATLAB, SQL
Languages: English (fluent), Mandarin (native)
Certification: Bloomberg Market Concepts