# YITONG CAI

Jersey City, NJ | (720) 755-0024 | yitong.cai@nyu.edu | LinkedIn: www.linkedin.com/in/yitongcai


## EDUCATION

**New York University** — New York, NY
**The Courant Institute of Mathematical Sciences**
*MS in Mathematics in Finance* — *Sept 2018 - Expected Dec 2019*

- **Coursework Focus:** Data Structure & Algorithms, Object Oriented Programming, Market Microstructure, Econometric Modeling & Machine Learning Modeling, Risk Management, Time Series Analytics & Statistical Arbitrage, Option Pricing Analytics in Equities, Fixed Income and FX Derivatives

**University of Colorado Denver** — Denver, CO
*BS in Mathematics (Statistics Track); BA in Economics | GPA: 3.95/4.00* — *Sept 2015 - May 2018*

## EXPERIENCE

**EventVestor** — Princeton, NJ
*Quantitative Research Intern* — *Jun 2019 - Aug 2019*

- **Events Trading Strategies:** Researched U.S. equities strategies back-testing that long buybacks events and short adverse events and hold for certain days with daily rebalancing and transaction cost analysis for recent 4-year period (Sharpe Ratio: 1.46, Max Drawdown: 14.4%).
- **Time Series Predictive Models:** Developed enhanced ARIMA models for trend decomposition, tree-based regression and classification models (Random Forest and Boosting), and SVR; Aggregated and analyzed results for ten years to forecast the earning dates of 2,600 companies in 2020 (average accuracy: 0.81, RMSE: 1.18 days).
- **Natural Language Processing (NLP):** Improved name entity recognition models to identify sponsor from 53,000 conference names based on names mapping models, NLTK and Spacy models research (accuracy improved from 0.32 to 0.76).

**Aratz Capital** — Chicago, IL
*Part-time Quantitative Analyst* — *Mar 2019 - May 2019*

- **Data Extraction:** Performed web scraping to extract the options data to build database through MySQL.
- **Portfolio Management:** Programmed Markowitz Mean-Variance Theory and Black Litterman Model to determine weight of bond ETFs, and conducted daily rebalancing weight allocation automation with APIs.
- **Volatility Trading Strategies:** Researched low and high implied volatility strategies and back-testing, such as straddle, comparison between historical volatility and implied volatility with delta and gamma-neutral hedging and daily rebalance (Sharpe Ratio: 1.66, Max Drawdown: 16.9%).

**Bank of China International** — Beijing, China
*Quantitative Research Intern* — *Jun 2018 - Aug 2018*

- **Statistical Modeling:** Implemented linear and robust regression to filter factors that have predicting power of monthly return of CSI 800 Index stocks for 10-year period, and test the factors using t-statistic and Information Coefficient.
- **Dynamic Multi-Factor Model:** Improved combined static model factor from stepwise selection, PCA and elastic net through AdaBoost with input as filtered factors rank (long - short strategy on A-shares: Sharpe Ratio from 1.71 to 2.12, Max Drawdown from 12.18% to 6.23%).

## PROJECTS

**New York University** — New York, NY
*Order Book Simulation & Data Processing - via Java* — *Fall 2018*

- **Execution Management System:** Simulated an exchange with optimizing data structures that allow client interaction with quick adding, changing, cancelling orders, and delivering corresponding messages.
- **Back-testing Data Processing:** Converted and merged high frequency trading records from TAQ files to DAT files with developed dbreader, dbprocessor and dbmanager framework.

*K-Means Clustering - via Java* — *Fall 2018*

- **Standard and Modified Lloyd's Algorithm:** Divided generic multidimensional points into k clusters and into clusters with same number of points.

## SKILLS/OTHER

**Programming Skills:** Python, Java, SQL, Excel, R, Matlab