

## EDUCATION

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### NEW YORK UNIVERSITY

New York, NY

#### The Courant Institute of Mathematical Sciences

**MS in Mathematics in Finance** (September 2017 – December 2018)

- **Coursework:** Black-Scholes formula and Greeks, Monte Carlo, Black-Litterman, VaR, stresstest, ARMA, logistic regression, NLP, ridge regression, lasso regression, PCA
- **Awards:** Ranked top 4 for 2018 Morgan Stanley Prize for Excellence

### ILLINOIS INSTITUTE OF TECHNOLOGY

Chicago, IL

**BS in Applied Mathematics** (August 2013 – May 2017) **GPA: 3.97/4**

- **Coursework:** Differential Equations, Hypothesis Tests, Time Series Econometrics, OOP
- **Awards:** ‘Meritorious Winner’ in Mathematical Contest in Modeling, Menger best undergrad award

## EXPERIENCE

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### NANHUA-USA

Chicago, IL

**Summer Analyst** (May 2018 – August 2018)

- Forecasted crude oil futures prices, demand and supply using vector autoregressive model in Python
- Applied OLS to study the relationship between crude oil futures prices and spot prices in Python
- Calculated Monte Carlo VaR with different portfolio positions and backtested it in Python

### CHINA CONSTRUCTION BANK

Dalian, China

**International Business and Investment Banking Division Intern** (June 2017 – July 2017)

- Checked files attached to Documentary Collection and Documentary Credit to avoid risk of default
- Communicated with clients on their needs and advised them on appropriate products

### ILLINOIS INSTITUTE OF TECHNOLOGY

Chicago, IL

**Research Assistant** (May 2016 – July 2016)

- Implemented Heston Stochastic Volatility model using Quadratic Exponential and Broadie-Kaya Scheme in the Guaranteed Automatic Integration Library (GAIL)
- Modified the algorithm to extend the applicable range to the case when volatility of asset prices’ volatility is approaching zero by change of variables

**Student Assistant** (May 2016 – May 2017)

- Assisted with office work and holding math conference, such as creating schedules and name tag

## PROJECTS

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**Factor Forecasting with Economic Indicators** (Python)

- Replicated Fama-French size and value factor returns successfully using monthly asset return data
- Forecasted replicated factors using PCA, OLS, ridge regression and random forests technique
- Cleaned raw economic indicators collected from Datastream and CEIC to generate stationary dataset and forward filled in missing values to avoid look-ahead bias

**Latent Semantic Analysis** (Python)

- Recommended most related articles to an input string from 10k article corpus using SVD

**Computing in Finance** (Python & Java)

- Priced American options and constructed its early exercise boundary by least squares
- Priced European and Asian options using Monte Carlo simulation and antithetic method

**Risk and Portfolio Management**

- Developed industry momentum change strategy on constituent data of S&P 1500
- Optimized portfolio on seven Vanguard Funds using mean-variance and Black-Litterman model
- Filled in missing data using regression-based EM, bootstrapping and Brownian bridge method

**Prediction of Sales of Large Shopping Malls** (R)

- Collected and constructed features including ratings, population and income from public website
- Applied OLS, ridge regression and ARMA model to predict sales of large shopping malls in US and selected proper models by MSE and explained variation

## COMPUTER SKILLS/OTHER

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**Programming Languages:** Python, MATLAB, Java, R, GitHub, Bloomberg Terminal, Datastream, LaTeX  
**Languages:** Mandarin (native), English (fluent)