

# Yifei (Fahy) Gao

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## EDUCATION

### New York University, Courant Institute of Mathematical Sciences

New York, NY

*Degree: M.S. in Mathematics*

09/2021-10/2022

- *Coursework:* Scientific Computing, Stochastic Calculus, Advanced Topic in Mathematical tools (PhD), Risk and Portfolio Management, Numerical Analysis, Linear Algebra, Machine Learning for Finance, Complex Analysis II.
- *Awards & Experiences:* Grader of CSCI-UA.0101, Accelerated Bachelor-Master Scholarship, MCM Successful Participant, University Research Conference ([Analysis of the Applications of Machine Learning and NLP in Chatbot](#)).

### New York University

New York, NY

*Degree: B.A. in Mathematics*

01/2019-05/2021

- *Coursework:* Mathematical Statistics, Theory of Probability, Multivariable Analysis, Program and Data Science (Stern)
- *Awards & Experiences:* [E-board at Fine Arts Society](#), Editor in Chief at NYU.LIVE Media Group, Quantitative Research assistant at NYU Langone, Schreyer Honors Scholar, Founders Day Award, THON volunteer, Alpha Kappa Lambda.

## WORK HISTORY & RELEVANT ACTIVITIES

### One68 Global Capital

New York, NY

*Quantitative Developer and Trading Assistant*

10/2022-07/2023

- Created algorithm to auto-adjust risk estimate using Beta and SPY ETF, improving the accuracy of upside risk and downside risk for merger arbitrage strategy.
- Researched and built up signals to catch arbitrage opportunities between exchanges for ADR/ORD from events and asymmetry analysis for trading desk, improving exiting strategy accuracy and performance by 10%.
- Automated the process of morning reconciliation on JPM Market & Enfusion & Safari, requesting borrows and EOD P&L attribution calculation, resulting in a 40% reduction in manual processing time.
- Deployed the [rational database](#) and created a trader-friendly full stack web application as a research data platform using HTML, Django, AWS RDS, and AWS EC2, reducing query latency by 80% and increasing the daily P&L by over 10%.
- Created an automated fast [web-scraping algorithm](#) to scrape news across publications using selenium, win32com, and pytesseract, overcoming 5 to 10 seconds delay for traders to receive news.

### Shanghai Citang Technology Co., Ltd

New York, NY

*Software Engineer*

01/2021-10/2022

- Developed a web-scraping algorithm and censorship detector, collecting 30k “healthy” Chinese slangs with definitions
- Designed an ETL pipeline to store 30k scraped Chinese slang words into a relational data base using SQLite and Python.
- Designed and developed a [social media website](#) and a [slang dictionary](#) using React, Django and Vercel with no cost.
- Led a cross-functional team of 2 developers and 2 designers to design web products using Figma and Adobe Illustrator, resulting in reducing cost by 30% and over 10k followers on social media platforms.

### Courant Institute of Mathematical Sciences

New York, NY

*Researcher (Master thesis)* <https://github.com/fahygao/Latent-Semantic-Analysis-NLP>

01/2022-08/2022

- Demonstrated the superiority of Latent Semantic Analysis with Sparse PCA over traditional approaches through theoretical and empirical proofs, using K-means, SVM, and Naïve Bayes. Achieved faster fit and prediction times (10-20 times), and improved interpretability, with leading principal components explaining more variance.

### The Mathematical Contest in Modeling

New York, NY

*Team Lead*

01/2020-02/2022

- Introduced the formula “Degree Centrality” to analyze football players’ contribution to the entire network, which led to the phenomenon of Dyadic and Triadic Configuration.

## SKILLS AND ATTRIBUTES

- **Skills:** Python, SQL, Django, Bloomberg, Enfusion, JPMorgan Market, AWS EC2, RDS, S3, Rest API, Excel, Git, ETL/ELT, Option Pricing Model, React.
- **Interests:** Art History, Roller Skating, Bouldering, NLP, Guitar, A.I., Math, hiking, Texas Hold'em and more.