

# Tony Zhipeng Zhou

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## EDUCATION

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### The University of Chicago

Chicago, IL

#### Master of Science in Financial Mathematics (GPA: 3.71/4.00)

July 2023 – December 2024

- Courses: Multivariate Statistical Analysis, Numerical Methods, Quantitative Trading Strategies, Fixed Income Derivatives, Option Pricing, Probability & Stochastic Calculus, Computing for Finance in Python

### Columbia University

New York, NY

#### Graduate Certificate in Artificial Intelligence

July 2021 – December 2022

- Courses: Algorithms and Machine Learning, Neural Networks and Deep Learning, Natural Language Processing, Computer Visions and Robotics

### University of Georgia (GPA: 3.83/4.00)

Athens, GA

#### Bachelors of Business Administration in Finance and Management Info Systems

August 2015 – May 2019

## RELEVANT SKILLS

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**Computing:** Python, SQL, R, MATLAB, Power BI, Java, MS Office

**Knowledge:** Financial Markets, DV01 Hedging, Machine Learning, Statistical Modeling, Data Analytics

**Trading Products:** Fixed Income (High Yield, MBS, Municipals, IG, Short Duration), Forex, Convertibles, Options

**Other:** Google IT Automation with Python Specialization Coursera certificate (2023)

## PROFESSIONAL EXPERIENCE

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### Bank of America — Quantitative Researcher Intern

New York, NY | May 2024 – August 2024

- Implemented a rolling Gaussian Hidden Markov Model with dynamic training windows by creating a custom cost function based on KL divergence to label match post fit, and is used in unsteady regime predictions with out-of-sample hit rate over 70% on major market drawdowns of over 10%.
- Integrated a consensus mechanism for spectral clustering, aggregating label vectors from 1,000 simulations to stabilize and refine stock groupings based on technical metrics (fundamental ratios, pairwise correlations), which outperformed traditional GICS classification by achieving higher intragroup / lower intergroup correlations.
- Designed a two-layer IG flow predictor model that combines a rolling OLS with a GARCH-based residual correction mechanism to enhance prediction accuracy by 23% over the base model.
- Engineered custom risk factors that were significantly less correlated through a residualization process such as isolating Emerging Market (EM) risk not associated with US equity risk through rolling exponential OLS regression of MXEF on SPX, using the residuals as a proxy for independent EM risk.

### Shenkman Capital Management — Trading Assistant

New York, NY | July 2021 – December 2022

- Assembled a BI dashboard that tracks real-time new issue credit spreads and dynamically alerts PMs. This initiative eliminated daily manual requests, offering PMs real-time insights and enhancing decision-making efficiency.
- Built an Excel model that tracks implied volatility of select convertible bonds, seamlessly integrating Bloomberg data to proactively spotlight volatility surges.
- Systematically managed cash levels within SMAs, orchestrating portfolio trades tailored to maximize cash availability, all aligned with portfolio ratings, sectors, and relative values.

### HedgeServ — Small Core MO Associate

New York, NY | July 2019 – July 2021

- Served as prime point of contact for over 30 fund clients, streamlining their strategy process and ensuring flawless trade processes and downstream task completions, optimizing firm-client interactions.
- Planned the design and coded the development of bespoke reporting logics, empowering clients with tailored data analytics dashboards, thereby enhancing our service offering and meeting the unique demands of high-profile clients.

## PROJECTS

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### Bank of America—UChicago Project— Quantitative Researcher

Chicago, IL | October 2023 – January 2024

- Constructed a reputational AI risk model that can track news headline risk with 85% accuracy using a custom modified BERT transformer base with specific architectural augmentations for bank sentiment analysis.
- Developed an automated web scraper that can retrieve relevant news on the bank which are then systematically sorted into types of news before being fed into the NLP model for analysis.
- Established tools that can aggregate sentiment scores and provide a time series of any given window with regards to the daily change in public BofA sentiments.