# Muhammad Raafay Uqaily

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## EDUCATION

**The University of Chicago** Expected: **December 2024**
**Master of Science in Financial Mathematics**

- Courses: Probability & Stochastic Processes, Portfolio Theory & Risk Management, Python, Data Science, Fixed Income Derivatives, Credit Markets, Foreign Exchange, Options Pricing, Numerical Methods, Statistical Inference

**West Virginia University (*Honors College*)**
**Bachelor of Science in Engineering** (***Minors: Statistics & Economics***) GPA: **3.89/4.0**

- Courses: Intermediate Statistical Methods, Data Analysis, Econometrics, Design & Analysis, Engineering Economy
- Awards: Outstanding Senior Award (***Top 15 / 5200 Graduates***); Excellence in Diversity, Equity & Inclusion Award

## SKILLS

**Computing:** Python, R, MATLAB, SQL, C++, SPSS, Tableau, Git, MOS Certified in Word, PowerPoint, Excel, Access
**Certifications:** Bloomberg Market Concepts (***Bloomberg***), Python for Data Science, AI & Development (***IBM***), Finance & Quantitative Modeling for Analysts (***University of Pennsylvania***), Quant Research Experience (***JP Morgan Chase***)
**Technical:** Data Analytics, Machine Learning, Statistical & Time Series Analysis, Regression, Financial Econometrics

## EXPERIENCE

**Chicago Trading Company** **Chicago, IL**
*Quantitative Trading Analyst Intern* *June 2024 – Present*

- Researched event-driven volatility time decay of treasury contracts, proposing optimization of model parameters
- Implemented data pipelines using SQL and pandas to conduct data analysis, presenting findings to senior traders
- Gained technical experience in derivatives pricing, fixed income products, market risk & quantitative programming

**Prime Trading** **Chicago, IL**
*Quantitative Researcher– The University of Chicago Project Lab* *March 2024 – May 2024*

- Exploited statistical arbitrage opportunities by collaborating with a team of ***6*** quantitative researchers to analyze historical market data and visualize risk metrics for cocoa futures contracts traded on the Intercontinental Exchange
- Applied regression methods to construct mean-reverting spreads and generate trading strategies with Sharpe of ***5***

**Equity Methods** **Scottsdale, AZ**
*Financial Valuation Consulting Extern* *May 2024*

- Developed ***4*** forecasting models in SAS for stock compensation, proposing business-centric insights to consultants

**Bank of America** **Chicago, IL**
*Quantitative Researcher – The University of Chicago Project Lab* *October 2023 – January 2024*

- Investigated artificial intelligence (AI) applications for sustainable risk management and compliance within banking
- Utilized machine learning methods in engineering and back-testing ***2*** predictive AI models (Roberta-LSTM and Chat-GPT fine-tuned LLM) to track sentiment towards BofA in the news, regressing data on 5-year CDS spreads

**WVU Heart & Vascular Institute** **Morgantown, WV**
*Student Research Analyst* *July 2020 – May 2023*

- Delivered expertise in data extraction, manipulation, analysis, and visualization for ***10+*** published research projects
- Presented findings at ***6*** national conferences, utilizing non-parametric analyses and logistic regression modeling to translate complex trends from large datasets into actionable insights, while ensuring rigorous model validation

## PROJECTS

**Structural Credit Models** | *Credit Markets*

- Bootstrapped survival probabilities and hazard rate curves in python to price risky bonds using the Merton model

**Futures Contracts & The Commodity Basis Spread** | *Data Science*

- Computed risk metrics like VaR, cVaR, and max drawdown for commodities' futures data from Bloomberg, replicating a research study, and analyzing trends via an automated analytical pipeline in python using Pydoit

## EXTRACURRICULAR

**IMC Prosperity Challenge** | *IMC Trading* **March 2024 – April 2024**

- Ranked ***50th / 9136*** globally, demonstrating proficiency in market analysis, strategic thinking, & financial modeling

**Mathematics Teaching Assistant & Tutor** | *WVU Mathematics Department* **February 2020 – May 2023**

- Tutored, graded, and proctored for ***1750+*** students in algebra, calculus I, II, and III, earning dedicated service award