Tianqi (Mia) Mao

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EDUCATION

Duke University *Durham, NC*
Master of Quantitative Management in Business Analytics, Finance Track (GPA: 3.7/4.0) July 2023 – May 2024
Relevant Coursework: Data Science for Business, Decision Analytics & Modeling, Data Visualization, Derivatives, Fixed Income Securities, Financial Risk Management

University of California, Santa Barbara *San Barbara, CA*
Bachelor of Science in Financial Mathematics and Statistics and Theater (GPA: 3.8/4.0) Sep. 2019 – June 2023
Relevant Coursework: Mathematical Finance, Stochastic Processes, Advanced Numerical Analysis, Probability and Statistics, Regression Analysis, Methods of Analysis, Game Theory, Econometrics, Macro/Microeconomics

EXPERIENCE

Business Analyst Intern, McKinsey & Company *Beijing, China*
September 2022 – November 2022
- Led an in-depth analysis of Citi's Private Banking division, utilizing SWOT analysis and competitive benchmarking with **SPSS and SAS**, to identify strategic growth opportunities, leading to strategies for a 12% increase in client acquisition.
- Analyzed client group segments using **Salesforce CRM and Excel**, identifying barriers in Citi's services. Recommendations from this analysis led to a 25% improvement in customer satisfaction.
- Uncovered user needs and pain points for Citi's services using design thinking and UX tools **Miro**, aiming for a 15% increase in engagement and a 20% churn reduction.

Business Analyst Intern, Versailles Group *Boston, MA*
June 2022 – July 2022
- Conducted a comprehensive instability analysis of a leading lead-acid battery manufacturer, leveraging **advanced Excel models and Python** for data analysis, which helped identify critical financial trends and investment opportunities. Identified a 25% increase in revenue potential through the analysis.
- Employed industry-standard tools **Bloomberg Terminal** for in-depth research on the motor vehicle battery market, leading to the identification of a 15% untapped market potential.
- Analyzed financial data focusing on revenue streams and EBITDA using **Python and SQL**, uncovering potential risks and operational efficiencies that could improve net margins by up to 10%.

Business Analyst Intern, PricewaterhouseCoopers *Shanghai, China*
June 2021 – September 2021
- Utilized **SAP and Tableau** to enhance data visualization and analysis to enrich understanding of the bank's financial market division. Improved efficiency by 30% through enhanced data visualization techniques.
- Led a detailed analysis of bond sales, precious metals trading, and derivatives, employing statistical programming **R** for risk assessment, contributing to a 20% reduction in audit time by optimizing sampling techniques.
- Conducted random sampling tests on bonds and derivatives with **Python scripts**, achieving a 98% accuracy rate in estimating values compared to previous manual estimates.

PROJECTS

Application of GARCH and Mean-Variance Model in the U.S. Financial Market Fall 2023
- Constructed and applied a GARCH model to analyze volatility and price returns, integrating Monte Carlo simulations for comprehensive risk and return profiles.
- Evaluated and identified the optimal minimum variance portfolio, achieving a 17% return, alongside maximizing the Sharpe ratio portfolio with a 127% return.
- Constructed strategic investment decisions through effective portfolio management and risk assessment strategies.

Predictive Analytics for Second-Hand Vehicle Pricing in India Fall 2022
- Developed a robust predictive analytics model analyzing over 17,000 data points to price second-hand vehicles in India accurately.
- Applied Extreme Gradient Boosting (XGBoost) coupled with advanced feature engineering and hyperparameter tuning to enhance model performance.
- Offered precise pricing recommendations, optimizing transaction outcomes for buyers and sellers in the 2rd hand vehicle market.

Predictive Analytics in Stock Market Direction Spring 2022
- Engineered and trained a Convolutional Neural Network (CNN) model to forecast stock market trends, analyzing Nasdaq data across 82 features from 2009 to 2017.
- Overcame data challenges to capture temporal elements, training the model through 2000 epochs to refine prediction accuracy.
- Demonstrated the model's potential in processing multi-dimensional data for future stock market trend prediction and investment strategy development.

TECHNICAL SKILLS

Technical Proficiencies: Python, R, PyTorch, R, SQL, MySQL, MariaDB, Tableau
Advance Excel: VLOOKUP, Pivot Tables, Monte Carlo Simulation, Decision Tree
Language: Bilingual in English and Chinese (Mandarin)