

Nidhi Beeravolu

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EDUCATION

The University of Chicago

Master of Science in Financial Mathematics

Chicago, IL

Expected December 2024

- Courses: Quantitative Trading Strategies, Option Pricing, Numerical Methods, Machine Learning, Python for Finance, Probability & Stochastic Processes, Portfolio & Risk Management, Fixed Income & Derivatives, Credit & FX Markets

Birla Institute of Technology and Science, Pilani

Hyderabad, IN

Master of Science in Economics, Bachelor of Engineering in Electrical and Electronics

June 2021

- Courses: Object Oriented Programming, Applied Econometrics, Neural Networks, Game Theory, Macroeconomics

SKILLS

Computing and Software: Python (Pandas, NumPy, SciPy, Scikit-learn, Statsmodels, Matplotlib, Quantlib), SQL, C++, C, VBA, MS Excel, Bloomberg, Snowflake

Knowledge: Fixed Income Research, Statistical Modeling, Valuation, Risk Management, Time Series Analysis

Certification: Chartered Financial Analyst (CFA) Level 1 – October 2022

EXPERIENCE

State of Wisconsin Investment Board

Madison, WI

Investment Risk Analyst Intern – Risk Management

June 2024 – August 2024

- Analyzed ~\$30bn AUM fixed income portfolios (25% of company assets) using Factor models featuring Monte Carlo simulations, to identify key risk drivers (e.g. tracking error, VaR), enhancing risk-adjusted returns
- Designed and implemented 8 Snowflake SQL dashboards for performance and risk attribution, reducing data processing time by 50% and doubling team efficiency

Mizuho Securities USA LLC

Chicago, IL

Quantitative Researcher – Project Lab, University of Chicago

March 2024 – May 2024

- Generated synthetic CDS spread data (10x original) using generative models (CTGAN, SDV) in Python and achieved ~90% similarity to original data, validated through statistical testing, to enhance CVA inputs
- Applied synthetic data in cross-sectional regression for proxy CDS estimates, attaining ~10% error rate with actual market data in key groups using CTGAN, indicating improved accuracy for underrepresented groups

Loomis, Sayles & Company

Chicago, IL

Quantitative Researcher – Project Lab, University of Chicago

January 2024 – March 2024

- Implemented VIX entropy as an innovative investment signal across equity, bond, and currency ETFs, using sample and approximate entropy measures to identify opportunities and regime shifts
- Developed and backtested trading strategies in Python using VIX entropy signals, yielding a Sharpe ratio of up to 0.8 through parameter optimization with grid search and cross-validation

JP Morgan India Private Limited

Mumbai, IN

Credit Research Analyst - Emerging Markets (EM) Corporate Strategy

July 2021 – July 2023

- Authored in-depth research reports on EM corporate bond market (~\$2trn), in collaboration with 3 regional teams, offering insights on performance, risks, and investment opportunities to institutional investors
- Engineered a systematic VBA-automated approach to quantify EM corporate bond spread premia relative to sovereign yield curves, improving precision by ~ 5bp overall and reducing manual calculation time by 60x
- Created a data-driven methodology to quantify rating changes on EM issuers over 14 years, isolating sovereign-driven impacts and improving at-risk issuer prediction accuracy by over 25%, enhancing credit risk management
- Pioneered ESG premium calculation of EM issuers, by comparing with issuer yield curves and similar non-ESG bonds, identifying pricing inefficiencies and opportunities for sustainable investment strategies

J.P. Morgan India Private Limited

Mumbai, IN

Credit Research Intern - US High Yield (HY) & Leveraged Loan Strategy

August 2020 – June 2021

- Implemented a decision tree classifier in Python for rating transition analysis across US HY and IG markets, achieving over 95% accuracy in risk categorization and reducing analysis time by 15x
- Constructed a database of fundamentals for 250+ Leveraged Loan issuers over 15 years, utilizing internal models and Python web scraping of CapitalIQ database, streamlining initial fundamental analysis of asset class

ACADEMIC PROJECTS

The University of Chicago

Chicago, IL

Machine Learning-Based Stock Selection on US Equities

April 2024 – May 2024

- Engineered a Genetic Algorithm-based feature selection process in Python to identify key stock performance drivers from fundamental and technical indicators, enhancing stock selection accuracy for US equities
- Built Random Forest and SVM machine learning models on selected features, improving stock performance predictions, validated through backtesting on historical US equity data