

Alankar Shende

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EDUCATION

University of Michigan, Ann Arbor, MI

M.S. Candidate, Quantitative Finance & Risk Management

August 2024 - May 2025

- Current Coursework: Graduate Financial Mathematics 1, Regression for Linear Models, Stochastic Optimal Control for Algorithmic Trading, Predictive Analytics

Mathematics B.S, concentration in Mathematics of Finance & Risk Management

August 2021 - May 2024

- Cumulative GPA: 3.979/4.000
- Freshman Year Academic Program: Michigan Research and Discovery Scholars (MRADS)
- Relevant Coursework: Stochastic Analysis for Finance, Numerical Methods in Linear Algebra & in Finance, Markov Chains & Poisson Processes, Undergraduate Financial Mathematics, Probability, Theoretical Statistics, ODEs, Real Analysis

CERTIFICATIONS

Financial Risk Manager (FRM) Parts 1 & 2

Current Holder

- Passed the FRM Parts 1 and 2 exams after learning about credit, market, and liquidity risks through reading case studies and historical trends, exploring statistical methods to calculate risk measures (e.g., VaR, ES), and understanding products' risks alongside various derivatives' methods of pricing, trading strategies, and uses as hedging instruments

EXPERIENCE

Morgan Stanley

June 2024 - August 2024

Institutional Securities Group Risk Management Summer Analyst (Counterparty Management Groups)

- Recommended margin requirements for portfolios of cash equities, equity swaps, and US Crude WTI futures by developing product-specific stress tests to estimate maximum plausible losses over appropriate time frames
- Conceptualized and implemented different algorithms using Python to determine historical stressed return correlation matrices, to provide factor model-based expected rankings of portfolios' margin requirements for similar counterparties, and to construct plausible stressed WTI futures curves which generate calendar-spread portfolio losses over 1.2x the losses from historical back tests

Morgan Stanley

June 2023 - August 2023

Corporate Treasury Summer Analyst (Legal Entity Management)

- Presented financial resource utilization strategies for select nonmaterial U.S. entities after considering booking model optimizations, analyzing capital and liquidity benefits, and collaborating with global team members, with the recommendations netting over \$915 million in efficiency gains
- Successfully conceptualized, developed, and executed both a reporting automation process using VBA, saving 20 minutes daily, and a new automated entity-specific liquidity dashboard in Excel, to better visualize current trends

Model Federal Open Market Committee

February 2023 - Present

Research Chair

- Modeled the impacts of changes in prepayment risk for out-of-the-money residential mortgages on the agency MBS market using a Monte Carlo simulation which linked short-term Treasury rates simulations using the Vasicek stochastic differential equation with a pass-through MBS cashflow model based on the conditional prepayment rate
- Produced research reports on the evolution of commercial banks' aggregate balance sheets – using trends in counterparty risks, changing credit spreads, short-term bank borrowing, and HTM/AFS – and on an analysis of China's economy – based on business and consumer confidence, fiscal spending, trade relations, and the forex market

Undergraduate Research Opportunity Program (UROP)

October 2021 - April 2022

Student Researcher

- Committed 9-15 hours per week to developing a static portfolio replication method for low volatility securities by minimizing the Wasserstein distance from Optimal Transport between nonparametric return distributions
- Presented the findings at the MRADS Symposium and the National Conference on Undergraduate Research

AWARDS, SKILLS, & OTHER ACTIVITIES

- University Honors and James B. Angell Scholar for achieving all As for at least 5 consecutive semesters
- Experience in Python (Pandas, NumPy, Matplotlib), Bloomberg, VBA, LaTeX, and MS Office suite (Excel, PowerPoint)
- Current independent projects on (1) an iterative parameter estimation technique for a diffusion process with shock decays and (2) a correlation-linked metric to better identify co-moving securities during price shocks