Laxman Govind Zanwar

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Research Interests

Healthcare Operations: Resource allocation and health inequities using quantitative models
Supply Chain Optimization: Exploring dynamic pricing, and predictive analytics to increase efficiency
Digital Transformation: Real-time data processing and predictive analytics for operational efficiency and innovation

Education

Birla Institute of Technology and Sciences - Pilani Goa, India
Masters of Science in Economics [8.75/10] *August 2018 – June 2023*

Birla Institute of Technology and Sciences - Pilani Goa, India
Bachelor of Engineering in Electronics and Communication [8.75/10] *August 2018 – June 2023*

Experience

Quantitative Risk Analyst July 2023 – Present
Morgan Stanley *Mumbai, India*

- Engaged in regulatory initiatives within the Counterparty Credit Risk (IMM) team, with a focus on robust quantitative assessments and stochastic models for over-the-counter derivative trades on a quarterly basis
- Employed statistical techniques and modeling expertise to analyze back-testing outcomes across 2 asset classes (Commodity and Foreign Exchange), gaining expertise in complex pricing models and exposure calculations
- Served as the model specialist for the Basel III Stress Window Model, leading its revalidation through extensive research on multiple benchmark models and conducting in-depth sensitivity analyses

Risk Management Intern August 2022 – June 2023
Morgan Stanley *Mumbai, India*

- Developed and implemented a comprehensive backtesting framework using Python, demonstrating strong data management capabilities and ensuring accurate risk evaluations through large-scale data processing
- Utilized Python programming skills to automate numerous operational processes and developed analytical tools to streamline and enhance data analysis, increasing accuracy and creating efficiencies of 1 FTE per year
- Applied critical thinking and adaptability to address complex problems in model validation, risk analysis, and operational oversight, reinforcing analytical rigor and strategic decision-making in high-stakes scenarios

Summer Research Intern May 2020 – June 2020
Larsen and Toubro *Mumbai, India*

- Conducted research to develop a condition monitoring system for medium voltage circuit breakers, leveraging mathematical modeling and simulations to predict and prevent failures
- Used Weibull distribution for statistical analysis and generated 10,000 random values to create a custom distribution for circuit breaker reliability simulations
- Designed and applied IoT solutions to track temperature, humidity, coil current, and trip count, creating a reliability index for better predictive maintenance

Research Experience

Performance Analysis of Space-Time Block Codes [1] January 2022 – May 2022

- Analyzed the performance of Space-Time Block Codes (STBC) in multi-antenna systems under Rayleigh fading, leveraging orthogonality and Maximum-Likelihood detection for decoding
- Simulated encoding/decoding processes for various STBC configurations, demonstrating significant coding and diversity gains with minimal design complexity
- Undertaken in the Information Theory and Coding course, exploring advanced techniques such as closed-loop feedback and multi-user MIMO STBC for 16-QAM

Flow and Transmission of volatility within Indian stocks [2] August 2021 – December 2021

- Demonstrated the asymmetrical nature of volatility spillovers in Indian equity markets, with negative returns showing stronger correlation than positive returns

- Analyzed sectoral impacts post-2007 crisis using mathematical techniques like vector autoregression (VAR) to decompose realized variance into good and bad volatility and test for asymmetry, uncovering decision-making frameworks for corporate strategy
- Investigated as part of the Financial Risk Analysis and Management course, replicating a similar study on US markets to assess spillover effects in the Indian context, with an underlying similarity to supply chain disruptions present

Debt and Deficit Expenditure in China, France, Germany, & Turkey [3] January 2021 – May 2021

- Analyzed the impact of defense expenditure on government debt using the Generalized Method of Moments, finding a positive and significant relationship across all studied nations
- Evaluated the relationship between fiscal deficits and GDP in France and China using the Vector Error Correction Model (VECM), confirming a significant positive impact in France but no significant effect in China
- This project, part of the Public Finance Theory and Policy course, developed policy recommendations to optimize defense spending, manage fiscal deficits, and promote economic growth

Technical Skills

Programming Languages: Python, C++, MATLAB, R, Stata, SQL
Data Analysis Tools: Pandas, NumPy, Matplotlib, SciPy, SciKit-Learn, TensorFlow, Statsmodels
Techniques: Dynamic Programming, Monte Carlo Simulation, Optimization, Supply Chain

Teaching Experience

Student Mentor June 2023 – Present
Lighthouse Foundation *Mumbai, India*

- Volunteered with the Lighthouse Project, dedicating time to mentor students on career choices and providing valuable guidance for personal development
- Mentored 5 underprivileged students, giving tailored guidance on educational pathways, fostering their growth and aspirations

Teaching Assistant - Principles of Economics August 2021 – December 2021
Birla Institute of Technology and Sciences - Pilani *Goa, India*

- Assisted the Professor in overseeing the course Principles of Economics (ECON F211) with an expansive student enrollment exceeding 300
- Helped in the formulation of final examination questions, contributed to the organization and management of student records using Excel, and carried the evaluation and correction of answer scripts

Achievements

Received Quarterly Award: For displaying core value of putting client first at Morgan Stanley in Q3'2024
Received MCN Scholarship: Received merit cum need scholarship each semester [2019-2023] due to good grades
Top 3.5% rank in BITSAT 2018: Amongst top 3.5% of 200,000 candidates appearing for India wide BITSAT exam

Certifications

[1] Neural Networks and Deep Learning

[2] Improving Deep Neural Networks: Hyperparameter Tuning, Regularization, and Optimization

[3] Structuring Machine Learning Projects

[4] Python and Statistics for Financial Analysis