Anand Theertha Nakhate

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ACADEMIC QUALIFICATION

Dual Degree *Aug '17 - May '22*
Bachelor of Engineering in Computer Science & Master of Science in Economics
Birla Institute of Technology and Sciences (BITS) Pilani, Goa
Cumulative GPA :- 9.49/10
Economics Department Rank :- 1
Received **Institute Merit Scholarships** for being in the top 1% of the class.

PUBLICATIONS

Mishra, A.K., **Theertha, A.**, Amoncar, I.M. and R L, M, **Equity market integration in emerging economies: a network visualization approach**, *Journal of Economic Studies*, 2022 (*https://doi.org/10.1108/JES-07-2021-0343*)

Mishra, A.K., **Nakhate, A.T.**, Bagra, Y. et al., **The Impact of Directional Global Economic Policy Uncertainty on Indian Stock Market Volatility: New Evidence.**, *Asia-Pac Finance Markets*, 2023 (*https://link.springer.com/article/10.1007/s10690-023-09421-y*)

Nakhate, A.T., Mishra, A.K., **Employment Deprivation and Welfare Loss among Households in India: Application of Duration Sensitive Analysis**, *Submitted to Social Science Quarterly* (*https://anand-nakhate.github.io/Portfolio/research.html*)

RESEARCH PROJECTS

Dynamic Financial Networks of the G20: Crisis, Recovery, and the Evolution of Cross-Border Contagion Flows (2004-2021) *Jan '22– Mar '22*
Guide:-Prof. A.K. Mishra (Dept. of Economics and Finance, BITS Goa)

- Led a detailed analysis of the G20 financial markets' network, identifying changes during periods of crisis and recovery, and assessed the impacts of such transformations on global finance.
- Utilized statistical techniques such as Granger causality tests and vector auto-regressive (VAR) models to estimate return spillovers and network characteristics across G20 economies.
- Analyzed the roles of G20 economies during financial crises, distinguishing between shock-absorbing & spreading nations. This research has implications for international investment strategies and risk management, providing valuable insights into the structural characteristics of the global financial network.

Foreign Portfolio Investment and Economic Dynamics: An Exploration of Emerging Economies (2005-2019) (*https://anand-nakhate.github.io/Portfolio/research.html*) *Jan '20– Apr '20*
Guide:-Prof. A.K. Mishra (Dept. of Economics and Finance, BITS Goa)

- Undertook econometric modeling using VAR (vector autoregressive) models to analyze the interaction between foreign portfolio investment (FPI) and economic indicators across 23 emerging economies.
- Applied network visualization techniques, such as minimum-spanning tree networks, to examine equity market co-movements, enhancing the understanding of global investment patterns and connectivity.
- Implemented hierarchical clustering methods to segment countries based on economic indicators, revealing their collective economic trajectories. This analysis informs investment and risk management decisions, offering a granular perspective on the dynamics of emerging markets.

PROFESSIONAL EXPERIENCE

Morgan Stanley *Jan'22– July'23*
Associate (Offer from Internship), Strats and Quant, Fixed Income Division

- Engineered a comprehensive **metadata cataloging system**, optimizing data management for 15,000+ datasets, enhancing data discovery and accessibility, benefitting **1000+** professionals.
- Developed an advanced **query language** by developing generators for efficient data extraction, significantly improving analysis capabilities for 100+ traders and strategists.
- Engineered an ETL process for the **data quality system**, supporting strategy teams in monitoring and analyzing data across various asset classes.
- Worked on ideating and creating a **multi-asset class backtesting library** in python and Scala to price and back-test various trading strategies and analyze a portfolio of fixed income instruments with custom scenarios like curve shifting. The tool is currently Used by 10+ researchers, traders & strats.

Nanyang Technological University *Aug'21– Dec'21*
Research Intern, Speech and Language Laboratory

- Played a key role in developing an **Asynchronous Automatic Speech Recognition System**, managing micro-services for real-time transcription and enhancing transcription accuracy by 20%.
- Led the creation of a dynamic toolbox for NLP module integration, significantly improving system stability and introducing **Named Entity Recognition** to optimize transcription processes.

Microsoft *May'21– July'21*
Software Engineer Intern, Cloud & Artificial Intelligence

- Designed and Implemented **Spark Auto-Scale Simulator** with custom executor support that simulates a Spark application based on the event history file from a single run of the Spark application.
- It markedly accelerates operational efficiency by estimating time, cluster utilization, and cost metrics in under a minute - a significant reduction from traditional processing times by over **100 times**, reducing time and cost metrics for cloud-based applications.

Indian Institute of Remote Sensing, ISRO *May'19– July'19*
Research Intern, Remote Sensing & Geoinformatics Group

- Pioneered the enhancement of Software for LiDAR Data - **DHAROHAR**, for advanced LiDAR Data Analysis integrating modules for GLCM Texture Extraction and 3D Point Cloud Data management.
- Led a project on **Satellite Image Segmentation using UNet Deep Learning Architecture.** Successfully trained deep learning models under constrained conditions achieving 70% accuracy in the semantic segmentation of urban features from high-resolution, multi-spectral satellite images.

Karvy *May'18–July'18*
Research Intern, Equity Research Desk

- Led an in-depth analysis of macroeconomic trends affecting the Indian equity market, utilizing econometric models and data analysis tools. This research played a pivotal role in guiding the firm's strategic investment decisions and portfolio management, particularly in volatile market conditions.
- Conducted technical analysis on IT Sector using EMA and RSI for identifying potential buy/sell signals and utilized Bollinger Bands and Fibonacci Retracements for volatility and price trend analysis.

SKILLS

Languages: C,C++,Python, Java, Scala, q, R, Stata **Data Management:** SQL, Excel, Power BI.
Tools/ Libraries: Scikit Learn, pyTorch, Tensorflow, pyspark, kafka, nltk, spacy, opencv
Econometric Models: ARMA, ARIMA, ARCH/GARCH, VAR **Risk Analysis:** VaR, Stress Testing

RELEVANT COURSEWORK

Finance: Fundamentals of Finance and Accounting, Business Analysis and Valuation, Financial Management, Derivatives and Risk Management, Financial Risk Analytic and Management
Economics: Econometric Methods, Microeconomics, Macroeconomics, International Economics, Money Banking and Financial Markets, Public Finance Theory and Policy, Applied Econometrics
Computer Science: Computer Programming, Object Oriented Programming, DSA, Database Systems, Operating Systems, Computer Networks, Artificial Intelligence, Information Retrieval
Mathematics: Advanced Calculus, Probability and Statistics, Linear Algebra & Complex Analysis, Mathematics and Statistical Methods, Differential Equations

EXTRA CURRICULAR ACTIVITIES

Teaching Assistantship, BITS Goa *Jan'19 - Apr'21*

- *Department of Economics and Finance* - Facilitated instruction in Derivatives & Risk Management, Financial Risk Analytics & Management and Business Analysis & Valuation courses, enhancing student understanding through interactive tutorials. Contributed to the design and execution of course projects, aiding students in applying theoretical concepts to practical scenarios.
- *Department of Computer Science* - Assisted in the Object Oriented Programming course, clarifying complex concepts and boosting students' programming skills. Designed the lab component, enhancing practical learning and student proficiency in software development.

Mentor, Peer Mentorship Program, BITS Goa - Effectively guided five students through their academic and social journey at the institute, significantly enhancing their confidence and engagement, and contributing to a supportive educational atmosphere.

Clubs: Played a key role as a core member/ mentor in 180 Degrees Consulting Club and Wall Street Club, leading interactuve sessions focusing on financial modeling and quantitative analysis techniques.