

KUSHALA RANI TALAKAD MANJUNATH

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SUMMARY

Applied Mathematics graduate with a foundation in engineering & hands-on experience turning large, datasets into clear, actionable insights, seeking full-time Analyst roles & open to relocation across the USA; skilled in SQL, Python, R & Excel/Power BI/Tableau for data cleaning, statistical analysis & dashboard reporting, with applied experience in regression, hypothesis testing, time-series forecasting & program metrics tracking; proficient in translating quantitative findings into stakeholder-facing reports that support data-driven decision-making.

EDUCATION

Northeastern University | Boston, MA | Jan 2024 – Dec 2025

Master of Science in Applied Mathematics

Relevant Courses: Probability, Applied Statistics, Numerical Analysis, Machine Learning & Statistical Learning, Neural Networks & Deep Learning

JSS Science and Technology University | Mysore, India | Aug 2019 – Jul 2023

Bachelor of Engineering in Civil Engineering

Relevant Courses: Advanced Calculus, Computational Mathematics, Matrix Methods of Structural Analysis, GIS (Geographic Information System)

SKILLS

Programming & Query Languages: SQL, Python, R, MATLAB, C

Data Analysis & Visualization: Excel (PivotTables, VLOOKUP, Power Query), Power BI, Tableau, Pandas, NumPy, Matplotlib, Seaborn, Microsoft Forms

Statistical & Quantitative Methods: Regression, ANOVA, Chi-Square Testing, Hypothesis Testing, Time-Series Forecasting, statsmodels, scikit-learn, SciPy

Tools & Platforms: Git/GitHub, Jupyter Notebook, Google Colab, Microsoft Office Suite, LaTeX, ArcGIS, QGIS

PROFESSIONAL EXPERIENCE

Program Analyst – Northeastern University, Boston, MA | Apr 2026 – Present

- Collect, clean & audit cross-institutional enrollment data for a city-funded youth employment initiative serving 3,000+ students across 15+ Schools, ensuring data accuracy across 120+ program participant records, applications & work permits, & enrollment tracking to support operational decision-making.
- Maintain data integrity across multi-stakeholder program correspondence, coordinating with students, families, school counselors & Northeastern HR/Payroll contacts, identifying & resolving discrepancies in payroll records, logistics documentation & enrollment data to ensure continuous program compliance.
- Synthesize program performance data into stakeholder-facing summaries & reports for city & university leadership, completing HR compliance & I-9 onboarding documentation, & representing the program as employer partner at the 2026 futureBOS Youth Jobs & Resource Fair alongside 100+ organizations.

Research Assistant – Northeastern University, Boston, MA | Sept 2025 – Present

- Validated Mathieu special functions, contributed to SciPy on the official open-source GitHub repository & named in the Acknowledgements of a peer-reviewed academic paper, by converting MATLAB prototypes into Python, preserving numerical accuracy & performance characteristics across platforms.
- Designed automated test frameworks, generating golden-value reference datasets to validate Mathieu eigenvalue, angular & modified function computations across 500+ parameter combinations using orthogonality checks & Wronskian identity tests, & developed diagnostic heatmap visualizations to communicate numerical stability analysis against DLMF standards & contributed Python test suite code, bug reports & documentation.

Operations Coordinator – Bridge to Calculus, Northeastern University, Boston, MA | Apr 2025 – Aug 2025

- Tracked & analyzed a ~\$250K program budget for a six-week STEM summer program serving 100+ underrepresented students, building Excel & SQL-based data tracking dashboards to monitor enrollment, scheduling & resource utilization across 15+ partner schools.
- Designed & distributed Microsoft Forms surveys to collect student enrollment, preference & eligibility data, then analyzed results into structured reports supporting decisions on class placement, staffing & event logistics, & supported intern & mentor onboarding, & managed program communications & correspondence across faculty, students & mentors while tracking attendance & engagement KPIs across Calculus Field Day, R/Python data science workshops.

Teaching Assistant – Applied Mathematics Capstone, Northeastern University, Boston, MA | Jan 2025 – Apr 2025

- Guided 30+ undergraduate students through end-to-end data analysis projects spanning health analytics, energy conservation, recommendation systems, food nutrition classification & transit classification, advising on statistical methods & feature engineering.
- Reviewed student methodology & analytical approach for statistical rigor across regression, classification & optimization techniques, ensuring valid interpretation of results using Python, R & MATLAB, & flagging common technical challenges back to the course instructor.
- Graded assignments, project milestones & final presentations against instructor rubrics, providing written feedback on technical accuracy & communication of data-driven findings while managing submissions, office hours & progress records on Canvas.

PROJECTS

Foreign Exchange Rate Forecasting (Quantitative Analysis) | Jan 2024 – Apr 2024

- Designed a forecasting pipeline for the EUR/USD currency pair motivated by the Meese-Rogoff Puzzle, analyzing 6,119 daily historical observations to test whether statistical & deep learning approaches could outperform a random-walk baseline for medium-term exchange rate prediction across multiple forecast horizons & window sizes.
- Implemented & benchmarked SARIMAX models, dense & LSTM neural networks, CNNs & Facebook's Prophet using TensorFlow, Keras, statsmodels & pandas, evaluating results via rolling-window cross-validation with RMSE, MAE & directional accuracy metrics, & finding Prophet outperformed deep learning models yet still fell short of the baseline.

COVID-19 Impact on Student Behavior (Statistical Analysis) | Jan 2025 – Apr 2025

- Investigated relationships between lockdown time-allocation patterns, digital behavior & health outcomes by analyzing 1,182 student survey responses, applying chi-square tests, ANOVA, logistic & ordinal regression in R to model predictors of weight change, learning satisfaction & digital platform engagement.
- Validated data quality by resolving missing values & categorical inconsistencies across survey responses, finding that physical activity was a critical protective factor for health & that tablet users reported higher engagement than smartphone or laptop users, then delivered findings via supporting visualizations for educational planning.

Academic Support Volunteer | Make A Difference NGO, India | Jul 2021 – Dec 2023

Taught advanced mathematics including calculus, differential equations, linear algebra, & probability to final-year high school students from underserved communities for 2+ years, with all students excelling in their board examinations & building strong foundations for higher education & STEM careers.