

# KUSHALA RANI TALAKAD MANJUNATH

[GitHub](#) | [LinkedIn](#) | [talakadmanjunath.k@northeastern.edu](mailto:talakadmanjunath.k@northeastern.edu) | (857) 396 – 7447 | Boston, MA

## Summary

Graduate student in Applied Mathematics with a strong foundation in Civil Engineering and experience in data analysis, GIS, and predictive modeling. Skilled in applying tools and software for data-driven decision-making, spatial analysis, and visualization. Seeking to apply analytical skills to support business strategy, optimize resources, and drive better decision-making.

## Education

### Northeastern University

Master of Science in Applied Mathematics, GPA: 3.524

Relevant Courses: Neural Networks and Deep Learning, Machine Learning, Numerical Analysis, Applied Statistics

Boston, MA, USA

Jan 2024 – Dec 2025

### JSS Science and Technology University

Bachelor of Engineering in Civil Engineering, CGPA: 8.83

Relevant Courses: Matrix Method of Structural Analysis, Geospatial Technologies, Advanced & Applied Geotechnical Engineering,

Advanced Design of RC Structures, Highway Engineering, Analysis of Structures, Urban Planning and Modern Architecture

Mysore, India

Aug 2019 – Jul 2023

## Skills

**Programming Languages:** Python, R, MATLAB, SQL, C

**Software Tools & Packages:** GIS (Geographic Information System), CAD (Computer-aided Design), AutoCAD, STAAD PRO (Structural Analysis and Designing Program), NLP, Pandas, NumPy, TensorFlow, Keras, PyTorch, Matplotlib, Seaborn, Power BI, Dashboards, Microsoft Office Suite, Jupyter Notebook, Google Sheets, LaTeX

**Certifications:** Top 10 percentile in International Academic Wiz (IAW), Matrix Method of Structural Analysis (NPTEL), Python for Data Science (NPTEL), MATLAB

## Experience

### Construction Operations Management Intern, PWD (Public Works Department)

June 2022 – Aug 2022

- Acquired hands-on experience in public infrastructure development & road safety, by managing and encompassing urban park development, installation of road safety features (thermoplastic paints, road studs, kerbs).
- Executed operation of various roller types, compliance with standard specifications, and gained comprehensive knowledge in bituminous road construction & quality control.
- Included base course preparation, hot mix placement with temperature control, multi-stage rolling operations, and quality testing through Marshall tests, field density verification, and surface tolerance measurements.

### Administrative Assistant, Bridge to Calculus (BtC), Boston, MA

Apr 2025 – Aug 2025

- Analyzed and optimized around \$250K program budget for a 6-week STEM program serving 100+ underrepresented students, including scheduling for classes, tutoring sessions, and faculty meetings.
- Supported hiring and onboarding of summer interns and mentors to ensure smooth program operations, coordinated annual campus events and streamlined administrative operations by implementing digital systems and automations.
- Utilized tools such as SQL, Microsoft Office Suite (Word, Excel, PowerPoint, Outlook), Google Workspace, Adobe Acrobat, and Excel/Sheets for data tracking and reporting.

## Projects

### Geospatial Climate Infrastructure Analysis (GIS)

Sept 2022 – Dec 2022

Designed an undergraduate-level project by performing geospatial analysis using ArcGIS and QGIS on 30 years of rainfall data (1990-2018) across Mysore District, applying IDW interpolation and statistical indices (SPI, CV) for climate variability assessment and drought monitoring to create spatial distribution maps for urban infrastructure planning through field data collection, spatial/non-spatial data integration, and overlay analysis.

### Recycled Materials for Road Construction

Jan 2023 – Apr 2023

Engineered and evaluated Reclaimed Asphalt Pavement (RAP) in Dense Bituminous Macadam mixtures through material testing (specific gravity, impact, crushing, LA abrasion) and Marshall Stability analysis (0–40% RAP, 4.5–5% bitumen), using Excel-based blending and statistical analysis to identify an optimal 30% RAP mix achieving 19.88 kN stability, offering a cost-effective and sustainable alternative to fresh aggregates while meeting standards.

### Foreign Exchange Rate Forecasting (ML)

Jan 2024 – Apr 2024

Developed a graduate-level project at Northeastern University, analyzing EUR/USD exchange rate trends using ARMA, LSTM, and Prophet models in Python with libraries such as yfinance, NumPy, pandas, and Matplotlib for data collection, preprocessing, and visualization, evaluating forecasting performance, highlighting predictive limitations across statistical and deep learning approaches.