Abhiram S Roddannavar

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EDUCATION

National Institute of Technology Karnataka   Surathkal, Karnataka
Bachelor of Technology in Civil Engineering   *Nov 2022 – May 2026(Expected)*
 - Major CGPA: 7.7/10.00

TECHNICAL SKILLS

Languages: Python, SQL, HTML

Libraries & Frameworks: NumPy, Pandas, Seaborn, Matplotlib, scikit-learn, TensorFlow

Technologies: MongoDB, PostgreSQL, MySQL, Jupyter Notebook, MLflow, DagsHub, Power-BI

Developer Tools: Git/GitHub, CI/CD, Docker, Kubernetes, Vercel, Postman

Course Work: Machine Learning, Deep Learning, NLP, MLOps

EXPERIENCE

Rainfall-Driven Landslide Prediction in Kerala: Civil Engineering Applications

Using Machine Learning   July 2024 – Dec 2024
Research Intern / ***Dr. Sreevalsa Kolathayar*** | Associate Professor
Department of Civil Engineering | NITK, Surathkal, Karnataka

- Developed machine learning models (Gaussian Naive Bayes, Random Forest, Logistic Regression) achieving **92% accuracy** in predicting rainfall-induced landslides, surpassing traditional threshold-based methods (ID, ED).
- Engineered cumulative rainfall features (24h, 48h, 72h) and refined datasets using advanced preprocessing techniques, enhancing model robustness and reliability.
- Integrated empirical threshold models with ML predictions, bridging **civil engineering insights with data-driven methods** to support safer infrastructure planning.
- Conducted geospatial analysis of historical landslide-prone zones in Kerala using **QGIS**, providing actionable insights for disaster risk mitigation.
- Research selected for presentation at **IInvenTiv 2025 (IIT Madras, Feb 28–Mar 1, 2025)** — India's premier national R&D exposition showcasing innovative solutions in disaster management.

PROJECTS

End-to-End ML Pipeline with MLOps Integration and Experiment Tracking | [Code]

Tools: Python, Scikit-learn, Pandas, MLflow, DagsHub, YAML, VS Code
- Built a complete **data science pipeline** with modular components for ingestion, validation, transformation, training, and evaluation.
- Integrated **MLflow and DagsHub** for experiment tracking, dataset/model versioning, and reproducible deployments.
- Implemented a **config-driven architecture** using YAML files to decouple logic from hyperparameter tuning.
- Trained and compared models (**Random Forest, Logistic Regression, ElasticNet)** using RMSE, MSE, and R^2 metrics.

End-to-end phishing website detection system | [Code]

Tools: Python, Flask, Scikit-learn, Pandas, NumPy, MongoDB, Docker, Git

- Developed a **machine learning-based system** to detect anomalies and potential security threats in network traffic data.
- Built a **modular pipeline** for data ingestion, preprocessing, model training, evaluation, and prediction tracking.
- Integrated with **MongoDB** to store logs, predictions, and historical network activity for monitoring and analysis.
- Containerized the application with **Docker**, enabling portable and scalable deployment.
- Designed a **Flask web interface** with Jinja2 templates for uploading network data and visualizing real-time predictions.

ACHIEVEMENTS

- Featured in **Prabhav** (Coffee Book Table), **Inventive** India's largest research and development fairs, Govt. of India IIT Madras, 2025.
- **Tapas program** - Selected as one of the top 40 students across Karnataka State, 2020
- Collage Level 3rd, Chess Championship, 2023
- District Level 5th, NMMS Examination, 2018
- Received **FFE Scholarship** for securing top rank in JEE-Main and KCET rank.

POSITIONS AND RESPONSIBILITIES

- **Executive Member of Marketing Team**, Kannada Vedike Club, NITK Surathkal.
- **Project Head**, Professional Association for Civil Engineers (PACE) Club, NITK Surathkal.