GOPIKRISHNA NALLAGORLA

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Experience

Elai AgriTech Pvt Ltd **Pune, Maharashtra**

Data Scientist **Dec 2023 – Present**

● **End-to-End Machine Learning Solutions:** Designed and implemented ML/DL models for complex geospatial challenges, leveraging remote sensing, satellite imagery analysis, and computer vision to drive data-driven innovation with measurable business impact.

● **Advanced Geospatial Analytics:** Led complete lifecycle of geospatial data science projects, developing farm boundary delineation models achieving 80% precision using cutting-edge remote sensing techniques, satellite imagery processing, and deep learning architectures.

● **Data Science Pipeline Development:** Demonstrated expertise in complete data science lifecycle from geospatial data acquisition and preprocessing to feature engineering, model development, validation, and production deployment via GitHub.

● **Technical Domain Expertise:** Applied deep knowledge in multi-spectral satellite data, NDVI analysis, temporal data processing, and building scalable ML models. Specialized in geospatial analytics, remote sensing interpretation, and domain-specific ML solutions.

● **Business Impact & Innovation:**

- Secured company funding through innovative geospatial data science solutions, contributing to business growth
- Streamlined analytical processes reducing manual effort by 70% while optimizing decision-making workflows

● **Advanced Predictive Modeling:**

- Built ensemble models (Random Forest, XGBoost, LSTM) for crop identification achieving 90% accuracy
- Developed yield estimation models using satellite imagery and health indicators with 87% prediction accuracy

● **Real-Time Analytics & Monitoring:**

- Implemented real-time monitoring systems using multi-spectral satellite data and IoT integration
- Created automated anomaly detection for data quality monitoring and risk assessment
- Developed interactive dashboards and BI systems for actionable insights

Technical Skills

Programming: Python, SQL, R, OOP, Functional Programming

ML/AI: Scikit-learn, TensorFlow, Keras, PyTorch, XGBoost, LightGBM, Random Forest, SVM, KNN, Regression, Decision Trees **Deep Learning:** CNN, RNN, LSTM, Autoencoders, Transfer Learning **Statistics:** Hypothesis Testing, A/B Testing, Time-Series Analysis, Bayesian Statistics

Deployment: Flask, Docker, REST APIs **Cloud:** AWS (S3, EC2, Lambda, SageMaker), **Databases:** SQL Server, PostgreSQL, MongoDB

Visualization: Power BI, Tableau, Matplotlib, Seaborn, Plotly

Projects

Crop Identification and Yield Estimation with Multi-Spectral Analysis

- Built sophisticated machine learning models integrating Random Forest, XGBoost, and LSTM networks for multi-class crop identification and temporal analysis, achieving 90% accuracy across diverse crop types, seasonal variations, and geographical regions using satellite imagery and NDVI data.
- Developed advanced yield estimation models by analyzing multi-spectral satellite data, crop health indices, and phenological stages, providing stakeholders with actionable insights achieving 87% accuracy for agricultural planning, risk assessment, and supply chain optimization.

Real-Time Crop Health Monitoring and Geospatial Analytics

- Designed and implemented empirical models for continuous crop health monitoring using time-series satellite data, spectral analysis, and IoT sensor integration, creating scalable geospatial analytics solutions for precision agriculture.

- Developed automated alert systems and predictive dashboards providing farmers and agricultural stakeholders with real-time insights, improving crop management practices, operational efficiency, and enabling data-driven agricultural decision-making.

Soil Nutrient Analysis and Agricultural Growth Stage Prediction

- Conducted comprehensive geospatial analysis of soil nutrient distribution patterns using satellite imagery, spectral analysis, and machine learning models to optimize crop cycles and predict agricultural growth stages with high precision.
- Implemented systematic approaches integrating multi-source geospatial data (satellite, soil sensors, weather data) with advanced analytics for improved agricultural monitoring, resource optimization, and strategic planning across diverse agricultural landscapes.

Anomaly Detection in Agricultural Geospatial Data

- Implemented advanced unsupervised learning models and statistical algorithms to identify anomalies in crop health metrics, yield patterns, and geospatial data quality, leveraging time-series analysis and spatial pattern recognition techniques.
- Developed automated anomaly detection systems for agricultural risk management, enabling proactive issue identification, reducing operational risks, and optimizing resource allocation in precision agriculture operations through intelligent data monitoring.

Farm Boundary Delineation Using Remote Sensing

- Led the development of a comprehensive machine learning pipeline combining computer vision and geospatial analytics to delineate agricultural field boundaries with 80% accuracy, utilizing advanced remote sensing techniques, satellite imagery processing, and semantic segmentation algorithms.

Education

Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT) **2022 - 2024**

- M.Sc. Data Analytics
- CGPA: **7.1**

Relevant Coursework

• Python programming	Data Structures	Spatial Data Analysis	GIS
Machine learning	Deep Learning	Image Analysis	Statistica

Professional Skills

● Spatial Problem Solving ● Technical Communication ● Project Management ● Field Survey Coordination ● Cross-functional Collaboration.

Positions of Responsibility

- **Core Team Member & Project Lead** - *Elai AgriTech Pvt Ltd*
  ● Key founding team member instrumental in building the company's geospatial and remote sensing capabilities, establishing technical frameworks and operational workflows. ● Led and organized multi-disciplinary teams for complex remote sensing projects, coordinating between field operations, data processing, and analytical teams. ● Managed end-to-end project execution for major agricultural mapping initiatives, ensuring quality deliverables and adherence to project timelines. ● Established standard operating procedures for geospatial data processing, quality control protocols, and technical documentation standards. ● Mentored team members on advanced remote sensing techniques and GIS methodologies, building internal technical capacity.

Interests

● Geospatial Technology Innovation ● Agricultural Sustainability ● Outdoor Activities and Sports ● Technical Blogging on Remote Sensing Applications

Languages

- English(fluent)
- Hindi(fluent)
- Telugu(native)