

P Chaturaksari Kiranmai

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SUMMARY

Highly analytical and process-oriented Data Scientist/ML Engineer with 3 years of professional experience in interpreting and analyzing data to develop real-world applications.

- Proficient in working with LLMs, machine learning algorithms, statistical modeling and SQL
- Machine Learning model building using PYTHON.
- Data Visualizations using Plotly and PowerBI.
- Excellent understanding of business operations and analytic tools for effective data analysis.

EXPERIENCE

Data Scientist

December 2022 – March 2025

National Remote Sensing Center, ISRO

Hyderabad, India

- Developed generative AI chatbots and implemented Green Cover Index (GCI) estimation models using advanced AI/ML techniques, enhancing automation and environmental analysis capabilities.
- Conducted comprehensive exploratory data analysis (EDA) to identify and interpret correlations between government assets and land use patterns, supporting data-driven decision-making.
- Collaborated with cross-functional teams, including data scientists, domain experts, and project managers, to deliver high-impact AI/ML solutions; mentored and supervised junior engineers to foster skill development and project success.
- contributing to award-winning research publication and data-driven solutions.

Lecturer & Data Analytics Facilitator

June 2015 - March 2020

Sneha Degree College

Khammam, India

- Instructed undergraduate and graduate courses in data analytics, programming (Python, R, SQL), and database management, improving students' technical proficiency and industry readiness.
- Designed and evaluated laboratory examinations, rigorously assessing students practical skills in data analysis and software development.
- Served as external examiner for lab practicals, ensuring standards in technical and analytical competencies.
- Supervised student research projects, providing mentorship in research methodologies, problem-solving, and technical implementation

EDUCATION

Jawaharlal Nehru Technological University

August 2014 – December 2016

Master of Technology in Computer Science

Jawaharlal Nehru Technological University

August 2007 – May 2011

Bachelor of Technology in Information Technology

PROJECTS

Data Scientist

December 2022 – March 2025

Company: National Remote Sensing Centre

Hyderabad, India

Project: Domain-Specific RAG Chatbot | *Python, RAG, PEFT, Pinecone, Mistral-7B, LangChain*

- This project aims to create a QA assistant that leverages a knowledge base of domain specific documents. Users can extract information, search for related information, and ask questions.
- The system uses a hybrid search approach(**Pinecone with BGE sentence embeddings**) and enabling cosine similarity-based retrieval of semantically similar text chunks from large corpora. These chunks are then used by **Mistral-7B** to generate responses.

Project : ML-Driven GDP Prediction Using NTL | *ML frameworks, Deep Learning & Time-series models*

- [Research paper Publication url](#)

- Designed a predictive modeling pipeline to estimate Gross Domestic Product (GDP) trends using Night-Time Lights (NTL).
- Engineered spatial and temporal features from raster data and trained Recurrent Neural Networks (**RNNs**) to capture patterns and cyclical trends
- Integrated auxiliary socio-economic indicators to enhance model interpretability and predictive power
- Conducted rigorous time series analysis and model validation, comparing results with official GDP data, and achieved strong correlation with 99% R2-score in GDP prediction.
- Presented research paper at the Asian Conference on Remote Sensing (**ACRS**) 2024 and received the **Excellent Paper Award** for AI in remote sensing.

Project : Green Cover Analysis for Highway Corridors (NHAI) | RemoteSensing & analysis, ML/DL

- Developed an AI-driven pipeline to estimate the Green Cover Index (GCI) using satellite imagery and vegetation indices, enabling accurate assessment of green cover across diverse geographic regions
- Applied scene-to-scene normalization and NDVI refinement, using **RandomForestRegressor** for green cover estimation and **U-Net** architecture for vegetation segmentation to improve classification accuracy and reduce spectral inconsistencies in satellite raster data.
- Automated spatial analysis using GeoPandas and Rasterio by integrating remote sensing layers with administrative boundaries to generate region-wise GCI metrics for **30,000 km of road corridors**.
- processing over **10 TB** of satellite data and guiding junior engineers throughout the project.

Project : Spatial EDA of Rural Assets with Satellite Data | Python, Pandas, Matplotlib, EDA, scikit-learn

- Performed spatial and temporal exploratory data analysis (**EDA**) by integrating Geo-MGNREGA asset data with satellite imagery to analyze rural development activity and land use impact.
- Correlated government-reported asset locations with remote sensing indicators to identify patterns in infrastructure creation, environmental influence, and resource allocation.
- Automated spatial processing using GeoPandas to overlay asset data with land classification layers, supporting detailed visual and statistical insights.
- Generated region-wise summaries and trend analyses to aid in evaluating the effectiveness of development programs.

Project : Spatiotemporal Change Detection via NTL | Python, Plotly, Pandas, Rasterio, GeoPandas

- Developed an interactive data visualization dashboard to analyze and display temporal changes in Night-Time Lights (NTL) data across specific geographic regions.
- Processed multi-year satellite imagery to detect infrastructure growth and development patterns using spatial overlays and light intensity variation.
- Utilized **Plotly** to create dynamic time series plots and heatmaps, enabling stakeholders to explore changes over time and compare regions interactively.

SKILLS

Core Skills: Generative AI(GenAI), Natural Language Processing, Conversational AI, Machinelearning , Deep Learning, Statistical techniques, Supervised and Unsupervised Learning, Predictive Analytics, Machine Learning Pipelines

LLM & GenAI: Hugging Face, LangChain, RAG, Prompt Engineering, GPT, Gemini, BERT, PEFT

Programming Languages:c++, Python, SQL

Frameworks:: LangChain, LangGraph, LangSmith

Web Frameworks:: Flask

Libraries: Torch, Tensorflow, Huggingface, Transformers, ScikitLearn, PEFT, Langchain, NumPy, Matplotlib, Statsmodels

Visualization Tools: Plotly, Excel

Machine Learning & Statistical Techniques: Supervised Learning, Unsupervised Learning, Time Series Analysis, Predictive Modeling, Statistical Techniques, Feature Engineering

Softwares: Jupyter, Visual Studio, GitHub, Anaconda, ChatGPT etc.

CERTIFICATIONS & CONTRIBUTIONS

Data Scientist Assoc. [Link](#)

Gemini Imagen Badge - Google [Link](#)

Prompt Design in Vertex AI [Link](#)

ML Solutions using Vertex AI [Link](#)

UGC-NET JRF - 2022 (99.8 percentile)

GATE Qualified (2020, 2022) – AIR 3343