AMGOTH PAVAN KUMAR

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Linkedln Youtube

Education

IISc Bengaluru (2023 - 2025)	M.Tech in Climate and Earth Science	Current CGPA: 8.30/10
RGUKT Basar (2019 - 2023)	B.Tech in Civil	CGPA: 8.13/10

Relevant Coursework

- Probability and Statistics
- Machine Learning
- Decision Models
- Data Mining
- Data Analysis
- Deep Learning

Work Experience

Placement Coordinator *(Oct 2024- June 2025)*

Centre for Atmospheric and Oceanic Sciences, IISc

- Coordinating and Collaborating with various industries and organizations to organize recruitment drives for students to enhance placement opportunities at Centre for Atmospheric and Oceanic Sciences.
- Developing and maintaining relationships with industry partners to understand their hiring needs and align recruitment strategies accordingly.
- Analyzing placement data to identify trends and areas for improvement in student recruitment processes, contributing to strategic planning efforts.

Technical Skills

Languages / Tools:	Python, JavaScript, MySQL, Google Earth Engine, Quantum GIS.
Developer Tools:	Jupyter, Visual studio, Spyder
Frameworks:	TensorFlow, Pytorch, Keras, Numpy, OpenCV, Matplotlib, Pandas, Scikit-learn, Geopandas
Technical Skills:	Machine Learning, Deep Learning, Natural Language Processing, Data Analysis, MapReduce, Image Processing, Signal Processing, Computer Vision.
Soft Skills:	Communication, Reasoning, Problem-Solving, Leadership, Critical-Path thinking, Collaborative, Time Management

Projects

Hyperspectral Image Classification: To enhance vegetation classification, hyperspectral image features were extracted using scikit-learn, and the classification was performed using models such as Support Vector Machine (with RBF kernel), Random Forest, and Deep Neural Networks, with and without Principal Component Analysis (PCA). Class imbalance was addressed using sampling techniques like SMOTE to improve accuracy. The overall classification accuracy improved after dimensionality reduction through PCA.

Albedo Change Using Google Earth Engine: The study focuses on identifying changes in Land Use and Land Cover (LULC) patterns, precipitation variations, and land surface temperature (LST), as well as the effect on albedo due to the bio-engineering of the Indira Gandhi Canal in the Bikaner Tehsil of Rajasthan. The analysis was carried out using LANDSAT and MODIS data obtained from USGS. A correlation analysis between LST, albedo, and NDVI was conducted to investigate the relationship between these variables, using Pearson's correlation coefficient.

Changing Intensity of Hydroclimatic Extreme events revealed by GRACE and GRACE-FO: The project employs satellite data from the Gravity Recovery and Climate Experiment (GRACE) and its follow-on mission (GRACE-FO) to monitor changes in terrestrial water storage, which is crucial for understanding hydroclimatic extremes. A novel spatial-temporal clustering algorithm is implemented to identify contiguous regions experiencing wet or dry conditions. The findings aim to enhance the understanding of how hydroclimatic extremes are changing over time, which is vital for water resource management, agriculture planning, and disaster preparedneddd in the face of climate change.

Land Use Dynamics and LST in Greater Hyderabad Municipal Corporation: This project investigates the land use and land cover changes in the Greater Hyderabad Municipal Corporation (GHMC) area from 1988 to 2022, focusing on the relationship between land use changes and land surface temperature (LST). Conducted a comprehensive LULC analysis to identify spatial changes over the specified period. Investigated the correlation between different land use classes and biophysical indices, revealing critical insights into urbanization impacts. Identified a significant increase in LST associated with rapid urbanization, particularly linked to a decrease in vegetation and water bodies. Documented area-wise transitions in land use classes, highlighting the dynamic nature of land use changes due to urban expansion.

Online Courses/ Certification

- Training course on Glacier Studies and Remote Sensing from DCCC, IISC (2024)
- The Big Data Analysis for Water-Related Applications from United Nations University (2024)
- Python for Data Science and Machine Learning Bootcamp from Udemy (2023)
- Geospatial Analysis using Google Earth Engine from Indian Institute of Remote Sensing, ISRO (2023)
- Y20 Panel Discussion titled 'Climate Change and Disaster Risk Reduction: Making Sustainability a way of Life'