Anand Cheruvu

AI / Machine Learning Engineer (Computer Vision & Geospatial Systems)

AI / Machine Learning Engineer with hands-on experience building end-to-end ML systems for geospatial, satellite, and time-series data. Strong background in computer vision, anomaly detection, and data pipelines, with industry experience deploying ML-backed dashboards and APIs in production environments. Worked in space-tech startups (Pixxel, Skyroot) on real operational systems involving hyperspectral imagery, satellite passes, cloud-cover analytics, and automated decision-support tools.

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Surrey, London

British Citizen

github.com/Sukhoi-Mcgregor5?tab=repositories

EDUCATION

MSc Student: Computer Vision, Robotics and Machine Learning

University of Surrey

09/2025 - Present

Courses

- Computer Vision & Image Processing
- AI & IoT
- Satellite Remote Sensing
- Speech & Audio Signal Processing

BE - Computer Science & Engineering

NHCE, VTU

10/2021 - 05/2025 *8.3 GPA*

ML Related Courses & Project

- Data Mining & ML, OOPS, Unix, DBMS, DSA, AWS Cloud Computing
- Motion Dection via Security Cameras

SKILLS

Python, NumPy, Pandas, OpenCV | Machine Learning, Anomaly Detection, PCA, Time-Series Analysis | Hperspectral Image Processing, Cesium.js, Leaflet.js, Folium | GeoJSON, Shapely, Tesselation | C++, Java, CNC Programming | AWS, Docker, REST APIs and API Testing, Stremlit, Grafana | Large Language Models: Claude (Anthropic), GPT-style models

WORK EXPERIENCE

SW Technical Associate

Pixxel Space

11/2024 - 05/2025 *Bengaluru, India*

Pixxel is a space data company, building a constellation of hyperspectral earth imaging satellites & tools to mine insights from that data

Achievements/Tasks

- Built and deployed **12+ production dashboards** used by mission-operations teams to assess satellite pass feasibility, cloud-cover probability, and telemetry, supporting real-time imaging decisions.
- Implemented **automated TLE ingestion and live orbit propagation**, enabling accurate satellite pass prediction and visualization.
- Designed geospatial visualization pipelines using Cesium (3D), Leaflet.js (2D), and Folium to render satellite tracks, ground coverage, and imaging footprints.
- Developed ML-assisted analytics for hyperspectral and weather data, including anomaly detection and dimensionality reduction workflows
- Integrated external APIs (Spire Weather, File & Path APIs) to ingest GRIB-based weather datasets and perform region-specific cloud-cover aggregation.
- Dockerized dashboards and background services, **improving reliability and deployment consistency** across environments..
- Embedded satellite imagery and analytics outputs into **Python-driven LaTeX reports** for internal and stakeholder consumption.

WORK EXPERIENCE

R&D Technical Associate
Skyroot Aerospace

08/2024 - 09/2024 *Hyderabad, India*

Skyroot is developing a series of small-lift launch vehicles crafted for the small satellite market.

Achievements/Tasks

- Designed and implemented an automated tender aggregation and classification system, extracting data from multiple public procurement websites.
- Built an **ML-based classification pipeline** to categorise tenders, improving searchability and relevance for internal stakeholders.
- Developed user-facing dashboards using **Streamlit** to visualise and filter tender data efficiently.
- Worked with structured and unstructured data using **Pandas, NumPy, BeautifulSoup** , and Python automation scripts.

Software Intern – CNC & Manufacturing Systems
Sansera Aerospace

09/2022 - 10/2022 *Bengaluru, India*

Sansera is one of the leading manufacturing companies in India to manufacture components in the aerospace sector

Achievements/Tasks

- Gained hands-on exposure to **CNC programming and aerospace manufacturing workflows**, including machining of aluminium alloys, titanium, and composite materials. Developed an understanding of **engineering tolerances, production constraints, and quality considerations** in aerospace component manufacturing.

PROJECTS

Hyperspectral Time-Series Change Detection	Implemented ML-based change detection on hyperspectral satellite imagery and video. Applied PCA for dimensionality reduction and RX anomaly detection to identify temporal changes. Built end-to-end pipelines covering preprocessing, feature extraction, and visualisation.
Satellite Imaging Feasibility Dashboard	Built a Streamlit-based dashboard to evaluate satellite pass timing, coverage, and cloud-cover risk. Integrated geospatial datasets (GeoJSON, Shapely) for accurate spatial analysis
Image Feasibility & Cloud-Aware ML Scoring System *	Satellite imaging missions fail or produce low-value data due to: Cloud cover Poor illumination Bad timing. I am building an ML system that predicts whether a satellite image request is “worth taking” based on weather, geometry, and historical patterns.

CERTIFICATES / CROSS DISCIPLINES

PCAP™ – Certified Associate Python Programmer
https://verify.openedg.org/?id=g4P7.bZ1m.kkPR

CCNAv7 certificates: Cisco Certified Network Associate
Introduction to Networks (ITN), Switching, Routing, and Wireless Essentials (SRWE), and Enterprise Networking, Security, and Automation (ENSA)

MOOC course Artificial Intelligence for Aviation Applications

MOOC course in Structures in Aerospace Engineering from the University of Delft.