

SUJOY MUDI

Senior Geospatial ML Engineer | Remote Sensing • GeoAI • Environmental Modelling

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SUMMARY

Machine Learning & Geospatial Specialist with 7+ years of experience developing deep learning and ML models for environmental monitoring, forest carbon, natural hazards, and large-scale satellite analytics. Strong expertise in CNNs, U-Net, Transformers, semantic segmentation, time-series modelling, and cloud-native geospatial engineering (STAC/COG, xarray/dask, GEE, AWS/GCP). Skilled in model validation, drift evaluation, reproducible pipelines, and integrating EO data with field measurements for MRV and carbon assessments.

CORE SKILLS

Machine Learning & AI: CNNs, U-Net, Transformers, segmentation, RF/XGBoost/SVM, uncertainty, drift analysis.

Programming: Python, R, SQL, PyTorch, TensorFlow, xarray, dask, APIs, CI/testing.

Remote Sensing & Geospatial: GDAL, Rasterio, STAC/COG, QGIS, ArcGIS, ENVI; Sentinel-1/2, Landsat, MODIS, Planet.

Cloud & DevOps: AWS, GCP, Docker, Airflow/Prefect, GitHub Actions, Snowflake, PostGIS.

WebGIS: GeoServer, Leaflet, Mapbox.

EXPERIENCE

BeZero Carbon — Geospatial ML Analyst II (2024–2025)

- Developed global pipelines for drought, wildfire, cyclone, and sea-level rise monitoring.
- Led Natural Hazards product development, delivering risk layers and client-facing analytics.
- Built forest carbon evaluation workflows integrating EO variables and field plots.
- Contributed to biomass pipeline including global plot DB and local field surveys.
- Productionised geospatial pipelines using GitHub, Snowflake/PostGIS, and Prefect.

BeZero Carbon — Geospatial ML Analyst I (2022–2024)

- Built ML models for LULC change, degradation, biomass (AUC > 0.90).
- Developed AWS/GCP ingestion pipelines and STAC standardization.
- Reduced dataset inconsistencies by ~30%.

IIT Kharagpur — Senior Project Assistant (2020–2022)

- Built forest fire risk model ($F_1 \approx 0.82$).
- Led SLR workflows and resilience mapping.

IIT Kharagpur — Junior Project Assistant (2019–2020)

- Automated shifting cultivation monitoring.
- Worked on mangrove biomass modelling.

Stesalit Systems Ltd — Technical Executive, GIS (2018–2019)

- GIS/WebGIS QA/QC and OGC service integration.

EDUCATION

MS (Research), Forest Fire Modelling — IIT Kharagpur (2022)

M.Sc Remote Sensing & GIS — Vidyasagar University (2018)

B.A (Hons), Geography — Vidyasagar University (2016)

CERTIFICATIONS

SQL (DataCamp), Java Dev, Python, Android Development, Web GIS.

PUBLICATIONS

Remote Sensing (2021), Geocarto International (2021), Tropical Ecology (2021), Current Science (2021), Springer (2021).

PROJECTS

Natural Hazard Monitoring, Forest Carbon MRV, Shifting Cultivation Mapping, Fire Risk Modelling, Enterprise WebGIS.