MUDITMAYANK MISHRA

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Education

VIT Bhopal University   **Bhopal, Madhya Pradesh**
Bachelor of Technology in Computer Science & Engineering   *Expected June 2026*
- CGPA: 8.36/10.0
- Relevant Coursework: Data Structures, Algorithms, Object-Oriented Programming, Database Management

Experience

Remote Sensing and GIS Intern   **July 2025 – August 2025**
India Space Academy   *New Delhi, India*
- Automated water body detection across 85,000+ km² (Odisha state) using NDWI satellite analysis, processing Sentinel-2 MSI imagery through Google Earth Engine to identify 214,311 discrete water features with ¡10% cloud coverage filtering
- Built cloud-based geospatial processing pipeline integrating GEE JavaScript API for temporal compositing (Aug 2024-Aug 2025 imagery) with QGIS for vector conversion, area calculation, and cartographic production
- Deployed normalized difference water index algorithm (NDWI = [Green-NIR]/[Green+NIR]) on year-long Sentinel-2 dataset, generating binary classification masks and GIS-ready polygon shapefiles with precise area statistics
- Produced enterprise-grade deliverables including georeferenced raster masks (30m resolution), vector datasets with 214K+ features, and publication-ready maps with complete cartographic elements for hydrological monitoring

Space Technology Intern   **September 2025**
Agnirva Space Internship Program   *Remote*
- Successfully completed The Agnirva Space Internship Program encompassing approximately 440 steps and spanning around 80 hours across an 8-week period
- Consistently exhibited diligence while acquiring broad array of knowledge and skills in space technology and applications
- Program recognized by AICTE demonstrating commitment to high-quality space education and training

Projects

Urban Heat Island Detection System | *Python, Flask, Google Earth Engine, ML, Leaflet.js*   **2025**
- Developed full-stack geospatial application detecting urban heat islands across Bangalore and Delhi through satellite data fusion (LST, NDVI, Urban Land Use) via Google Earth Engine, processing 2023 MODIS/Landsat imagery
- Built Flask REST API backend serving temperature predictions and hotspot classifications, integrated with Leaflet.js mapping frontend for real-time visualization with Chart.js analytics dashboard
- Created ML prediction model identifying UHI hotspots using thermal gradient analysis and urban land cover classification, completed as 9-day hackathon deliverable with cloud-ready deployment architecture

Used Cars Price Predictor | *Python, XGBoost, Streamlit, scikit-learn*   **2025**
- Built end-to-end ML pipeline processing 15,000+ vehicle records with automated feature engineering (12+ derived features), IQR outlier removal, and XGBoost regression optimized via 50-iteration RandomizedSearchCV
- Designed preprocessing pipeline combining KNN imputation, RobustScaler normalization, polynomial features (degree-2), and OneHotEncoding through ColumnTransformer architecture for mixed data types
- Deployed production Streamlit application with 3-tab interface, real-time Plotly visualizations, and comparative market analysis delivering ¡200ms prediction speed through model caching

CommuteCare Project (BARC) | *Web Development*   **2024**
- Developed web application to report and track transport-related incidents like accidents, refusals, and overcharging
- Created comprehensive incident reporting system for improved transport safety and accountability

Technical Skills

Programming Languages: Python, Java, C++, JavaScript, HTML/CSS, SQL
ML/Data Science: XGBoost, scikit-learn, Pandas, NumPy, Feature Engineering, Hyperparameter Optimization
Web Development: Flask, Streamlit, RESTful APIs, Leaflet.js, Chart.js, Plotly
Geospatial: Google Earth Engine, QGIS, Remote Sensing, NDVI/NDWI Analysis, Satellite Imagery Processing
Tools & Platforms: Git/GitHub, MySQL, Docker, Jupyter, VS Code
Specialized: Urban Heat Island Detection, Geospatial Analysis, ML Pipeline Development, Data Visualization

Certifications

- IBM Cyber Security Analyst (CECSAIIN) – IBM Career Education Program
- Applying Data Analytics in Finance – University of Illinois (Coursera)
- The Bits and Bytes of Computer Networking – Coursera (20.5 hours)

Additional Information

Sports: Football & Badminton Player
Languages: English, Hindi (Native)
Core Strengths: Cybersecurity Analysis, Problem-Solving, Geospatial Analysis, Machine Learning