

Abhay Dnyandeo Kale

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Education

M.G.M.'s Jawaharlal Nehru Engineering College (JNEC)	2024 – 2027
B.Tech in Artificial Intelligence & Data Science — Minor: Cybersecurity — Graduating 2027	CGPA: 8.49 / 10
CSMSS College of Polytechnic	2022 – 2024
Diploma in Computer Science & Engineering	85%

Technical Skills

Programming Languages: Java, Python, C/C++, SQL, JavaScript

Software & Backend Development: FastAPI, REST APIs, PostgreSQL, Redis, Git, Docker, Linux (Ubuntu)

AI / ML & Computer Vision: PyTorch, TerraTorch, Scikit-learn, LightGBM, CatBoost, YOLOv11, RT-DETR, EasyOCR, OpenCV, Pandas, NumPy, IBM Watson

Cloud & DevOps: GitHub Actions, AWS, Oracle Cloud Infrastructure (OCI), Google Cloud (Vertex AI, Gemini)

Experience

GIS Intern	May 2023 – Aug 2023
Flyview GIS Technology Pvt. Ltd	Chh. Sambhajanagar, India
– Processed and structured 500+ satellite-imagery features into clean, usable datasets using QGIS, accelerating data pipelines for 3 client projects. – Improved database accuracy by 30% by designing and executing systematic QA/QC validation workflows, strengthening data integrity across large-scale datasets.	

Projects

Sutra – URL Shortener	Java, Springboot, React, PostgreSQL, Redis, JWT, Docker	2025
– Engineered a full-stack, scalable URL shortener with reusable REST APIs, JWT authentication, and a PostgreSQL/Neon backend containerized with Docker. – Optimized hot-path redirect lookups using Redis caching to eliminate redundant DB hits, achieving sub-500ms redirect latency under concurrent traffic on a resource-constrained free-tier server.		
Automated Traffic Violation Detection	Python, RT-DETR, EasyOCR, FastAPI, React	2026
– Building an end-to-end AI-driven software pipeline integrating RT-DETR for real-time vehicle detection and EasyOCR for license plate recognition, targeting 90%+ accuracy across lighting conditions. – Architecting a FastAPI backend with a live React dashboard to log, annotate, and surface violations; applying inference optimization for low-latency, reliable processing.		
Traffic Demand Forecasting – Flipkart Gridlock 2.0	Python, LightGBM, CatBoost, Optuna	2025
– Built a 4-model ensemble (Optuna-tuned LightGBM + CatBoost) achieving OOF R^2 of 94.56% on a large-scale dataset; optimized blend weights via Nelder-Mead minimization. – Implemented OOF K-Fold target encoding with lag-96 features to prevent data leakage, improving model reliability and generalization on temporal data.		
Crop Type, Health & Yield Estimation	Python, XGBoost, Scikit-learn, Sentinel-2, Capella SAR	2026
– Built an end-to-end two-stage ML pipeline using Sentinel-2 optical time series and Capella X-band SAR to predict per-field crop type, crop-relative health index, and yield-to-date estimates. – Engineered phenology, spectral, backscatter, GLCM texture, and field-level features; trained XGBoost classification and regression models with cross-fitted crop probabilities to reduce data leakage.		

Certifications & Achievements

Top 40 of 1,000+ Teams – ANRF AISEHack 2026, IIIT Hyderabad

Oracle OCI Data Science Professional (2025) – Credential ID: 323107873OCI25DSOCP

Google Cloud Study Jam – Top 20 (2026) – Vertex AI, Gemini, and Google Cloud API tracks; GDG On Campus, MGM University

NIELIT ISEA Phase III Bootcamp – Cyber Security and Cryptography (2026) – Successfully completed a 5-day bootcamp organized by NIELIT, covering information security, cryptography, network security, and web application vulnerabilities.

GSSoC – Merged PR #1277 to spicetify/spicetify-themes; fixed a CSS regression from Spotify's flexbox-to-grid migration (2025)

Event Organizer – Swayambhu: Concept 2 Code (2025) – Designed problem sets and managed 100+ participants, MGMU JNEC