Neal Daftary

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Summary

AI Enthusiast with experience in developing end-to-end AI pipelines and deploying data-driven solutions to real-world engineering problems.

Education

Institute Of Technology, Nirma University *Aug 2024 – May 2028*
B.Tech in Artificial Intelligence And Machine Learning; CGPA - 7.95(till 3rd Sem)

Technical Skills

Languages: Python, TypeScript, C
Frameworks & Libraries: Flask, FastAPI, Next.js, React, PyTorch, TensorFlow, Scikit-learn, OpenCV
Computer Vision: Image Processing, CNN, Vision Transformers (ViT), YOLO, DINOv2, U-Net, Mask R-CNN, ResNet
Databases: SQL, NoSQL, Azure Cosmos DB
Cloud & DevOps: Docker, GCP, Azure

Experience

Computer Vision Engineer - 8x Sports(Remote) *June'25 – Sept'25*
- Developed visual search engine with YOLOv8 object detection, DINOv2 features, OpenCV texture analysis.
- Implemented FAISS for achieving millisecond-latency semantic similarity search.
- Earned a Letter of Recommendation for high-impact technical execution.

Product Engineering Intern- MZHUB Faithtech(Remote) *Oct'25 – Dec'25*
- Led end-to-end product and technical research for AI-driven solutions (AI OCR, agentic AI, CX automation, knowledge-grounded chatbots) at MZHub.
- Built and optimized the website frontend for performance and SEO, and implemented contact workflow automation.

Student Researcher - Dept of CSE, Nirma University(Hybrid) *Jan'25 – Present*
- working under a project of **Indian Space Research Organisation(ISRO)**.
- Developing AI system for automated detection, segmentation and morphometric analysis of lunar surface features using deep learning on Chandrayaan-2 imagery.

Research Experience

CatBoost-Driven Anomaly Detection in Industrial Robotic Arms
- Published in *IEEE Sensors Letters (2026)* proposing CatBoost anomaly detection framework for robotic arm fault detection achieving 97.20% accuracy and 0.9718 F1-score on 200K+ CASPER sensor samples, outperforming SSL and traditional ML baselines.

Projects

Lumin.AI — AI-Powered Solar Inverter Predictive Maintenance Platform
- Architected a 7-stage ETL pipeline converting noisy SCADA telemetry into Parquet datasets, engineering 183 time-series features to capture temporal degradation.
- Built a hybrid Isolation Forest & Optuna-tuned XGBoost risk engine; mitigated a 97/3 class imbalance using SMOTE and Walk-Forward CV to prevent data leakage.
- Deployed the model as a production FastAPI microservice with dynamic SHAP explainability, streaming real-time visual diagnostics to a RAG-powered dashboard.

SpectraScan – AI-Powered Defect Detection for Paint Inspection
- Engineered an automated CV system for automotive quality control, securing the 4th National Rank at the 6th Mitsubishi Electric Cup 2026.
- Integrating a DINOv2/FPN-UNet segmentation model with classical IP calibration, architected a production pipeline to quantify multi-class defect areas in mm^2 for automated pass/fail decisions.
- Optimized the architecture by mapping metrics with MLflow and tuning hyperparameters via Optuna.

Position of Responsibility

Student Chairperson - Association of Computer Machinery ITNU *Sept '25 - Present*
- Leading 200+ member technical community, organizing workshops and speaker sessions.

Certifications

- **Advanced Learning Algorithms**: DeepLearning.AI (Stanford) - Coursera Score: 99.77% *Certificate*

Achievements

- **Winner – Aubergine Track, HackAMined National Hackathon (2026)** – Secured 1st place in the Aubergine track and ranked **Top 5 Overall** (Finalist) among **400+ teams and 2300+ participants** in a national-level hackathon.