Neha Kulkarni

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Summary

Data science and machine learning enthusiast focused on practical deep learning systems. Experienced in building image classification pipelines, deploying lightweight CV apps, and writing clean, reproducible training workflows. Strong in Python, TensorFlow, OpenCV, and evaluation/validation strategies.

Education

Integrated M.Tech — Artificial Intelligence — ABC University, Hyderabad (2021 – 2026)
Relevant coursework: Deep Learning, Computer Vision, Statistics, DBMS

Technical Skills

Programming: Python, SQL, Bash (basic)
Deep Learning: CNNs, transfer learning, regularization, hyperparameter tuning, model interpretability
Computer Vision: OpenCV, image segmentation basics, object detection fundamentals
Frameworks/Tools: TensorFlow/Keras, scikit-learn, Git, Docker (basics)

Projects

Driver Drowsiness Detection | Python, OpenCV, CNN (Sep 2025)

- Built a real-time drowsiness detection system using eye aspect ratio features and CNN-based classification.
- Added alert logic and smoothing to avoid false positives during face occlusions or lighting changes.
- Tested across multiple lighting conditions; documented failure cases and improvement plan.

Plant Disease Classification (Transfer Learning) | Python, TensorFlow/Keras (Jul 2025)

- Trained a transfer-learning model (EfficientNet/MobileNet) to classify plant leaf diseases from images.
- Performed augmentation, stratified split, and evaluated with precision/recall and confusion matrix.
- Generated Grad-CAM visualizations to validate focus on infected regions.

Document Scanner App (Edge Detection) | Python, OpenCV (Jan 2025)

- Created a document scanner pipeline using edge detection, contour detection, and perspective transform.
- Improved robustness by adaptive thresholding and automatic corner detection heuristics.
- Packaged the prototype for demo and wrote a short user guide.

Experience

AI Research Intern — University CV Lab (Feb 2025 – May 2025)

- Worked on dataset preparation and baseline experiments for image classification tasks.
- Implemented metrics dashboard scripts and ensured reproducible training runs with fixed seeds.
- Presented weekly progress updates and maintained experiment reports.

Achievements

- Google Developer Student Clubs — Core ML team member (2024–2025).
- Winner — Mini Project Expo 2025 for Plant Disease Classification system.