

# Pranav Baghare

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## EDUCATION

### Centre for Development of Advanced Computing (CDAC)

*Post Graduate Diploma in Artificial Intelligence (PG-DAI)*

Noida, Uttar Pradesh

August 2025 – February 2026

### Shri Vaishnav Vidyapeeth Vishwavidyalaya (SVVV)

*Bachelor of Technology in Computer Science*

Indore, Madhya Pradesh

October 2020 – October 2024

## TECHNICAL SKILLS

**Languages:** Python, SQL (Basic)

**ML / DL Libraries:** TensorFlow, Keras, Scikit-Learn

**Data & Computer Vision:** Pandas, NumPy, OpenCV, GDAL, Rasterio, NLTK

**Big Data Frameworks:** PySpark (Basic)

**MLOps / DevOps:** Git, Docker, Jenkins, Github

**Development Tools:** Jupyter, VS Code, Kaggle, Colab

**Core Concepts:** Supervised Learning, Unsupervised Learning, DNNs, CNNs, RNNs, GANs, NLP, LSTM, Transformer

## PROJECTS

### Satellite Imagery Segmentation & Deforestation Analysis | *Python, TensorFlow, mU-Net, Siamese U-Net*

- Developed an automated forest monitoring system using multispectral satellite imagery and deep learning.
- Implemented a Modified U-Net for pixel-wise forest segmentation and a Siamese U-Net for temporal change detection.
- Leveraged weak supervision with vegetation indices to reduce manual labeling effort.
- Achieved reliable forest loss and gain detection using standard segmentation metrics.

### Automated Pneumonia Diagnosis System | *Python, TensorFlow, DenseNet121*

- Developed a deep learning pipeline for Pneumonia detection using chest X-ray images.
- Implemented a custom CNN as a baseline model and leveraged transfer learning with **DenseNet121** to improve generalization.
- Fine-tuned DenseNet121 on a held-out test set, achieving **91% accuracy** and **94% recall** on Pneumonia cases.
- Examined the impact of deep feature reuse and dense connectivity on model performance for medical image classification.

### Autonomous Vehicle Traffic Sign Recognition | *Python, Keras, CNN, Streamlit*

- Designed and trained a multi-class CNN for traffic sign recognition on the GTSRB dataset (43 classes).
- Achieved **99.7% validation accuracy** through controlled training and regularization, demonstrating strong generalization on unseen samples.
- Implemented an image preprocessing and augmentation pipeline to improve robustness to illumination and viewpoint variations.
- Deployed the trained model as an interactive **Streamlit** web application for real-time inference on uploaded images.