Manas Kumar Jena

AI & Machine Learning Developer │ Bhubaneswar, Odisha
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SUMMARY

AI & Machine Learning Specialist with expertise in **Computer Vision, Deep Learning, and NLP**. Skilled in deploying optimized AI models using **TensorFlow** and **OpenCV**. Experience in integrating AI into scalable mobile/web applications using **React, FastAPI,** and **Firebase**. Passionate about solving real-world problems with cutting-edge AI solutions

PROJECTS

AI-Based Crop Disease Detection App

- Developed a **React Native app** leveraging **MobileNet V3 (CNN)** for real-time crop disease identification.
- Trained on 90,000+ images with **90% accuracy**. Optimized inference speed by 20% using FastAPI and advanced preprocessing techniques.

True Sight: CNN Based Synthetic Image Identification

- Designed a **CNN model** using **EfficientNetB2** to distinguish Real Images from AI-generated ones.
- Utilized data augmentation (rotations, flips, zooms) to boost model generalization.
- Integrated **Adversarial Training** with **FGSM** to enhance robustness against perturbations.
- Achieved **~87% accuracy** with strong F1, Recall, and Precision Metrics.

Retrieval-Augmented Generation (RAG) AI Chatbot

- Built an **AI-powered chatbot** that answers queries from **large document datasets** using **LangChain, ChromaDB,** and **Gemini LLM**.
- Implemented **semantic search** with **embeddings** to efficiently retrieve relevant content from multiple PDF uploads.
- Developed a FastAPI backend with a React-based UI for a seamless and interactive user experience.

EDUCATION

B.Tech in Computer Science (AI & ML) │ Trident Academy of Technology   **2022–2026**
GPA: 8.6/10
Jawahar Navodaya Vidyalaya, Gurujanga, Khordha   **2017-2020**
12th: 87.2%
10th: 91.4%

SKILLS

- **Machine Learning & AI:** Supervised & Unsupervised Learning, Deep Learning (CNN, RNN, Transformers)
- **Computer Vision:** Image Classification, Object Detection (YOLO), OpenCV, TensorFlow, PyTorch
- **Programming & Frameworks:** Python, FastAPI, Flask, TensorFlow, OpenCV, NumPy, Pandas
- **Databases:** MySQL, MongoDB, Firebase
- **AI in Applications:** AI Chatbots, RAG Systems, AI-powered Web Apps with React & FastAPI
- **Tools**: Google Colab, Jupyter Notebook, Git
- **Core Competencies:** Data Structures & Algorithms, Problem-Solving

ACHIEVEMENTS

- **Runners Up: ML Hackathon Pravaah'25, IIT BBSR**
- **Runners Up: AI Project Competition, BPUT Tech Carnival 2024**
- **2nd Runners Up: Hackathon Adastra'25, Einstein Academy of Technology & Management**
- **Certifications:** Problem Solving Through Programming In C (Elite, NPTEL) │ Programming in Java (Elite, NPTEL) │ Data Structures & Algorithms (Elite, NPTEL)

HOBBIES

- **Experimenting with AI Tools**
- **Building Personal AI Projects**
- **Listening music**