Asang Triratna Ingle

Akola, Maharashtra
+91-7756884920 asangingle07@gmail.com LinkedIn GitHub Portfolio

SUMMARY

Passionate Machine Learning and Deep Learning enthusiast with hands-on experience in computer vision, NLP, predictive analytics, and AI-driven automation. Proficient in CNN architectures (YOLO, U-Net, ResNet) and ML algorithms. Skilled in TensorFlow, OpenCV, LangChain, and Flask, with projects in image classification, video analysis, and NLP apps. Experienced in building RAG-based QA bots and retrieval systems using open-source LLMs. Eager to leverage AI for impactful, scalable solutions.

EDUCATION

Indian Institute of Information Technology, Nagpur **Nov 2022 – Jun 2026**
B.Tech in Electronics and Communication Engineering *Nagpur, Maharashtra*

PROJECTS

Deep Learning for Traffic Speed Monitoring **2024**

- Built a real-time traffic monitoring system using YOLOv8 for vehicle detection and SORT for ID-based tracking.
- Applied custom region mask and dual-line logic to calculate vehicle speed using timestamp differences.
- Enabled automatic logging and saving of overspeeding vehicle images with ID, speed, and timestamp.
- Utilized Python, OpenCV, TensorFlow with modular overlays.

Mini-RAG: RAG with Gemini + Qdrant + Cohere Reranker (Live Link) **2025**

- Built a Streamlit-based Retrieval-Augmented Generation (RAG) app integrating Google Gemini for answer generation, Qdrant for vector storage, and Cohere Reranker for improved retrieval precision.
- Implemented text chunking (1000 chars, 150 overlap) and embeddings with all-MiniLM-L6-v2 (384-dim); stored and managed embeddings in Qdrant vector DB.
- Designed retrieval pipeline with top-k (10) search → Cohere reranking → top-3 context for grounded responses, including inline citations and source transparency.
- Added response latency tracking and token usage estimation, optimizing for speed and cost using Gemini Flash while maintaining reliable accuracy.

Media Sync Engine – Automated Sports Commentary Generator **2025**

- Developed a FastAPI-based backend that integrates BLIP for frame analysis and caption generation from video highlights.
- Leveraged Llama 3 (via Ollama) with structured prompts to transform scene captions into emotionally charged, ESPN-style live commentary scripts.
- Implemented text-to-speech (gTTS) and synchronized generated audio with video using MoviePy, producing fully narrated highlight reels.
- Built a Streamlit client app for seamless video upload, server interaction, playback, and one-click commentary video download.

Malaria Detection using CNN + DWT (under Dr. Nikhil Dhengre) **2025**

- Developed hybrid CNN-DWT model achieving 96.14% accuracy, F1 = 0.9614, MCC = 0.9229.
- Applied Discrete Wavelet Transform for multi-resolution image analysis before CNN processing.
- Implemented in TensorFlow/Keras with Google Colab GPU; used EarlyStopping and callbacks.

TECHNICAL SKILLS

Languages: Python, Embedded C
Frameworks/Libraries: Pandas, Numpy, Scikit-learn, Keras, TensorFlow, OpenCV, Streamlit, Hugging Face, LangChain, FastAPI, MoviePy
Visualization: Matplotlib, Seaborn
Deep Learning: ANN, CNN, RNN, YOLO, U-Net, ResNet
Techniques: Computer Vision, NLP, RAG, Neural Networks, Information Retrieval, Generative AI