ATHARV BHAT

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Machine Learning Engineer specializing in Computer Vision based automation, with hands-on experience building real-time AI systems for edge devices and FPGA. Skilled in YOLO models, MobileNet, LangChain/LangGraph, and end-to-end ML pipelines—from dataset creation to training, optimization, and deployment. Passionate about developing practical, on-ground AI solutions for Automobile, agriculture, and safety applications.

Education

N.K Orchid College of Engineering, Solapur (B.Tech) **AI&DS** (2022 – 2025)

HD jr College, Solapur (HSC) **HSC** (2019-2021)

Experience

InSiSo Technologies **Bengaluru | Oct 2025 – Present**

Computer Vision Engineer(intern)

Built and optimized real-time computer vision models for safety systems, including drowsiness/microsleep detection and FPGA-ready edge deployments, improving accuracy and inference efficiency across pipelines.

Sciqus Infotect Pvt. Ltd **Pune | Feb 2025 – Aug2025**

Software Developer Trainee (AI&ML)

Developed high-accuracy invoice extraction and churn prediction systems, and automated reporting workflows reducing analysis time by 40%.

Zensar Technologies ESD Programme **Pune| Dec 2022 – Oct 2023**

Trainee – Software & Data Engineering

Trained in Python, SQL, Java, and analytics, improving SQL performance by 25% through optimization.

Projects

1. Seatbelt Detection for Edge Devices & FPGA

YOLOv8 → ONNX → edge Flow

- Designed a real-time seatbelt detection system optimized for Edge devices and Lattice FPGA boards.
- Preprocessed, cleaned & annotated custom dataset; extracted ROI to reduce inference noise.
- Converted model to ONNX and optimized for FPGA deployment.
- Implemented Tiny-CNN/MobileNet variants for **<10ms inference** on edge.
- Built full pipeline: dataset → training → quantization → FPGA deployment.

2. Drowsiness / Microsleep Detection System for edge devices

- Developed a custom **drowsiness detection model**.
- Converted entire dataset to **monochrome** & reduced dataset size for faster training.
- Corrected false blink classification in V1 and implemented buzzer alert thresholding.
- Integrated **Mediapipe FaceMesh** + eye aspect ratio + deep model fusion for robust predictions.

3. Invoice Data Extraction (YOLOv8 + PaddleOCR, FastAPI)

- Built an AI pipeline using YOLOv8 + PaddleOCR achieving **98% accuracy**.
- Integrated FastAPI for real-time uploads and automated reporting.
- Optimized data handling to reduce processing time by **70%**.

4. Yoga Pose Detection (CNN + BiT Models)

- Built a real-time yoga pose detection system with webcam inference.
- Published Scopus-indexed research demonstrating strong performance.
- Optimized the model for fast, edge-friendly deployment.

Achievements

- **Finalist, InnoHacks 3.0 Hackathon** – Ministry of E&IT, KIET Ghaziabad (2024)
- **Published Scopus-Indexed Paper**: "**Enhancing Yoga Practice with Transfer Learning (CNN + BiT Models)**"

Technical Skills

- Languages: Python, SQL, R, Java, C++
- ML/DL: TensorFlow, PyTorch, scikit-learn, XGBoost, CatBoost, YOLOv7/v8/v10, MobileNet, EfficientDet
- GenAI: Transformers, Hugging Face, RAG, LangChain, Llama, LoRA/QLoRA
- Computer Vision: OpenCV, Mediapipe, Detectron2, Roboflow/Label Studio
- MLOps: MLflow, ONNX, TensorRT, sensAI, Docker, Git, FastAPI, CI/CD
- Visualization: Pandas, NumPy, Matplotlib, Seaborn, Plotly, Power BI, React, D3.js
- Edge / Hardware: Jetson Nano, Coral TPU, FPGA deployment basic