Vedant Chavan *AI/ML Engineer*

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Available Immediately | Open to Relocation

Profile

AI/ML Engineer with experience building intelligent perception systems, automation pipelines, and scalable REST APIs. Delivered real-time 3D vision, predictive maintenance, and RAG-based agents across edge/cloud environments. Skilled in Python, ONNX, TensorFlow, and integrating AI into operational workflows. Passionate about using ML to streamline R&D and drive sustainable innovation.

Career Highlights

- Developed a **stereo-CNN for night-time ADAS**, achieving ~3% MAE in the 10–30 m range on synthetic + real data.
- Boosted **YOLOv8 mAP from 60% → 90%** on low-light stereo input; deployed via ONNX on embedded GPUs.
- Created **9,000+ synthetic stereo pairs** in Unreal Engine 5; automated dataset pipeline reduced labeling by 90%.
- Built scalable **FastAPI** inference server with ONNX backend; **<50 ms latency** on 720p video input.

Skills

Programming: Python, C++, MATLAB

Computer Vision: Detection, segmentation, stereo depth, 3D reconstruction, calibration, point cloud processing

NLP & Agents: Transformers, RAG, FAISS, Hugging Face, semantic search

Deep Learning & ML: PyTorch, TensorFlow, Scikit-learn, XGBoost, CNNs, YOLO, ONNX Runtime, transfer learning

Embedded & Edge AI: Model quantization, ONNX deployment, GPU acceleration, TensorRT

Cloud & DevOps: Docker, GitHub Actions, REST APIs, FastAPI, AWS (EC2, S3), Streamlit

Experience

Hella GmbH & Co. KGaA (FORVIA HELLA)

03/2024 – 11/2024
Lippstadt, Germany

Master's Thesis | AI for Stereo Vision & Adaptive Headlight Systems

- Designed and trained a CNN for stereo depth estimation in the 10–30 m range under low-light conditions to support adaptive headlight control.
- Created 9,000+ synthetic stereo pairs using Unreal Engine 5 with an automated labeling and augmentation pipeline.
- Fused YOLOv8 detections with disparity outputs for 3D localization, achieving ~3% MAE against LiDAR ground truth.

08/2023 – 02/2024
Lippstadt, Germany

AI Research Intern | Intelligent Perception for Automotive Vision

- Fine-tuned and exported YOLOv8 as ONNX for low-light detection on stereo inputs; deployed in embedded ADAS prototypes.
- Developed stereo pipelines using BM, SGBM, and triangulation for 3D object localization in night-driving scenarios.
- Integrated semantic segmentation to recognize road areas for intelligent lighting decisions.

05/2019 – 03/2020
Pune, India

Indpro Electronic Systems Pvt. Ltd.
Automation Engineer

- Developed and deployed PLC control logic (ABB AC800M) for sugar industry automation systems.
- Designed HMI dashboards and supported on-site commissioning and troubleshooting across multiple facilities.

Projects

03/2025 – 04/2025

Transformer Chatbot with FAISS-based RAG

- Implemented a semantic chatbot combining transformer models with FAISS-based vector search.
- Deployed via Streamlit and Hugging Face Spaces for interactive querying.

02/2025 – 03/2025

FastAPI Segmentation Server (YOLOv11m + ONNX)

- Built scalable API for real-time segmentation using YOLOv11m with <50 ms latency on AWS.
- Deployed scalable ONNX-based pipeline using Docker and FastAPI for production-ready hosting.

10/2022 – 02/2023

Robotic Bin-Picking with Custom YOLO – Industrial Automation

- Trained custom YOLO for part detection and orientation in cluttered bins.
- Calibrated RealSense depth camera; implemented 3D pose estimation for robotic pick & place.

01/2025 – 02/2025

Predictive Maintenance with XGBoost

- Developed a failure prediction pipeline using XGBoost; achieved 98% accuracy through extensive tuning.
- Automated insights and reporting to support condition-based maintenance in industrial systems.

Education

10/2021 – 01/2025
Rosenheim, Germany

M.Eng. Engineering Sciences – Mechatronics
Technische Hochschule Rosenheim

- **Thesis:** Deep Learning-Based Stereo Vision for Object Localization in Nighttime Driving Scenes

09/2020 – 04/2021
Pune, India

PG Diploma - Advanced Computing
Centre for Development of Advanced Computing (CDAC)

- **Relevant Subjects:** Software Development, Algorithms & Data structures, Operating system

06/2015 – 09/2019
Vellore, India

B.Tech - Mechanical Engineering
Vellore Institute of Technology

- **Capstone Project:** Development of Automatic Incense Stick Feeder for ITC Ltd.

Languages

English
Fluent

German
B1 (Actively Improving)

Certificates

- Generative Deep Learning with TensorFlow - DeepLearning.AI
- Advanced Computer Vision with TensorFlow - DeepLearning.AI
- Machine Learning Specialization – Stanford University