Rushikesh Vasant Zende

rushikeshzende0303@gmail.com | +91-9356651976 | LinkedIn | GitHub

Profile Summary

AI/ML Engineer with hands-on expertise in building end-to-end machine learning pipelines, training custom deep learning models, and architecting scalable AI systems. Strong experience across Computer Vision, NLP automation, predictive modelling, and LLM-based orchestration. Capable of both research-driven experimentation and production-grade deployment using FastAPI, Python, and TensorFlow. Passionate about designing real-world AI solutions in healthcare, agriculture, and automation domains.

Education

PG Diploma in Artificial Intelligence (PG-DAI) — CDAC Guwahati   *2025 – Present*
B.E. in Information Technology — SPPU Pune   *2021 – 2025*

Experience

Java Full-Stack Intern — Sumago Infotech Pvt Ltd   *Dec 2023 – Jan 2024*
- Developed backend components for a secure healthcare management system using Java, Spring Boot, and MongoDB.
- Optimized appointment and workflow pipelines improving reliability and data-handling efficiency.
- Supported API integrations and improved error-handling components across backend modules.

Selected Projects

NeuroCortex-Lab — AI Orchestration Engine (LLMs + Systems)
- Engineered a modular, on-device multi-model inference engine enabling dynamic routing, offline reasoning, and multi-agent coordination.
- Designed intent-detection logic to automatically select optimal models for reasoning, coding, writing, and research workflows.

Parkinson's Disease Detection — CNN/SVM Hybrid with XAI (High Priority)
- Built a hybrid ML/DL pipeline analysing spiral/wave drawings to detect neuromotor degradation for early Parkinson's screening.
- Implemented custom CNN feature extraction combined with SVM classification to improve detection accuracy.
- Used LIME (Local Interpretable Model-Agnostic Explanations) to visualize and interpret key regions influencing model predictions.

Smart Farming — Real-Time Leaf Disease Detection (High Priority)
- Trained a CNN-based classifier for multi-class plant disease recognition across major crop categories.
- Deployed via Flask enabling farmers to upload leaf images for instant diagnosis.

Smart College Enquiry Chatbot — NLP Automation
- Developed a TensorFlow-powered multi-intent classifier with dynamic keyword mapping and fallback correction.
- Integrated with Django using session memory and database-driven automated Q&A workflows.

Predictive Analytics: Dynamic Flight Fare Prediction
- Built forecasting models using XGBoost and Random Forest with engineered route, season, and demand features.
- Designed complete pre-processing pipelines including cleaning, outlier removal, and feature encoding.

Custom ML/DL Model Development (Core Strength)
- Trained multiple ML/DL models from scratch including custom CNNs, handcrafted pipelines, and classical ML systems.
- Implemented low-level training loops, augmentation stacks, inference wrappers, and evaluation metrics across CV and NLP tasks.

Technical Skills

Languages: Python, Java, C, C++
AI/ML: CNNs, Deep Learning, Classical ML, NLP, Feature Engineering, Transfer Learning, XAI (LIME)
Frameworks: TensorFlow, Keras, Scikit-learn, OpenCV
Tools & Dev: Jupyter Notebook, Streamlit

Certifications

- Google Cybersecurity — Level 1 & Level 2
- NPTEL — Data Science for Engineers
- NPTEL — Data Analytics with Python
- NPTEL — Python for Data Science

Achievements

- Sunhacks Hackathon — Finalist
- National Engineering Olympiad — Participant
- University-Level Athlete — Kabaddi & Football