

ARWINDHRAJ KG

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PROFESSIONAL SUMMARY

Software developer focused on AI: I build end-to-end, scalable solutions with LangChain, Docker, and PostgreSQL. I have a track record of delivering production projects and improving team productivity through automation and practical innovation. Curious and adaptable, I quickly pick up new technologies and thrive in fast-moving teams.

WORK EXPERIENCE

AI Developer

Jan 2025 - Jun 2025

BrainbriC Innovations Pvt Ltd, Coimbatore, Tamil Nadu

- Finetuned an LLM using Unsloth + LoRA on vehicle-specific datasets to build a specialized AI assistant.
- Orchestrated LLM with LangChain, integrating YouTube Search and crawl4ai for real-time, enriched responses.
- Implemented LangGraph memory for contextual continuity with multi-user/session support.
- Added multilingual support via Sarvam-Translate (22 Indian languages) for inclusive access.
- Designed and deployed FastAPI + Docker services with CI/CD for scalability and reliability.
- Designed and implemented an image-to-image inference API with FastAPI, managing user accounts, plan tiers, and per-request credit usage with PostgreSQL for access control and metering.
- Prototyped a virtual try-on app (Next.js, TypeScript) for rapid UX testing and iteration.

Machine Vision & Automation Intern

Dec 2023 - Feb 2024

Bimetal Bearings Limited, Coimbatore & Hosur, Tamil Nadu

- Developed and deployed an AI-powered Surface Defect Vision Inspection System for metal bearings using a two-stage object detection model, four Basler industrial cameras, and Mitsubishi PLCs. Automated in-line inspections with sensor-driven triggering (proximity sensors + hydraulic lever), reducing inspection cycle time from 1 week (manual checks of 100,000+ bearings/day) to instant results, achieving 97%+ faster inspection.
- Designed and implemented 6 advanced Machine Vision Systems for metal component inspection, leveraging OpenCV for automated visual analysis and Mitsubishi PLCs for signal management. Integrated proximity sensors and hydraulic actuators to enable high-throughput, error-free quality checks on production lines.
- Built a PyQt-based desktop application for real-time monitoring and automated missing-feature detection in bearings, increasing manufacturing productivity by 97%+ while ensuring consistent top-tier product quality across projects.

SKILLS

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|--------------------------------|--|
| Programming Language | : Python, TypeScript |
| Frameworks & Libraries | : PyTorch, LangChain, Ollama, vLLM, TensorRT, Transformers, MCP, Next.js |
| Cloud & Database | : Google Cloud Platform, Firebase, PostgreSQL |
| Backend Frameworks & Tools | : FastAPI, Flask, Git, Docker, VS Code, Hugging Face |
| Operating Systems and Hardware | : Linux, Windows, Jetson Devices, Raspberry Pi |

PROJECTS

Visgenix - Facial Attendance System

- Developed an AI-powered facial attendance system using Raspberry Pi and facial keypoint clustering, achieving 96% accuracy across diverse lighting conditions. Integrated Firebase cloud storage and built a PyQt desktop application for real-time attendance monitoring and management.
- Led campus-wide adoption and training for 450+ faculty members at Sri Ramakrishna Engineering College, streamlining attendance workflows.

Pothole Detection using Jetson Nano

- Built an AI-powered pothole detection system for public transport using a TensorRT-optimized single-stage object detection model, trained on 50,000+ images, and integrated with Neo6m GPS for location tracking.
- Developed a Next.js web platform to display real-time pothole locations and images, improving road safety monitoring and reporting. Achieved 92% detection accuracy with 12 FPS inference on a Jetson Nano edge device, enabling efficient real-time deployment in resource-constrained environments.

EDUCATION

Bachelor of Technology in Artificial Intelligence and Data Science

2021 - 2025

Sri Ramakrishna Engineering College, Coimbatore, Tamil Nadu