

ARWINDHRAJ KG

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OBJECTIVE

AI enthusiast eager to apply expertise in machine learning and software development to innovative projects. Aiming to join a dynamic team where I can apply my experience with AI-driven solutions, optimize system performance, and drive technological advancements in the industry.

SKILLS

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

EXPERIENCE

AI Developer

Jan 2025 - June 2025

BrainbriC Innovations Pvt Ltd

Coimbatore, Tamilnadu

- Developed a vehicle-specific AI assistant using Ollama models through LangChain, created and integrated MCP tools for YouTube Search (via YouTube API) and real-time web search (using crawl4ai), with advanced memory management through LangGraph.
- Designed and deployed the AI assistant as a robust, scalable web service by creating FastAPI endpoints and orchestrating deployments with Docker, ensuring reliable operation across diverse environments.
- Designed and implemented an API for an image-to-image inference service running on a TensorRT model, handling live requests with FastAPI, managing user accounts, plan details, and per-request credit management with PostgreSQL.
- Prototyped a virtual try-on application using Next.js and TypeScript.

Computer Vision Developer

Dec 2023 - Feb 2024

Bimetal Bearings Limited

Coimbatore & Hosur, Tamilnadu

- Developed and integrated an AI-driven Surface Defect Vision Inspection System for metal bearings, utilizing a two-stage object detection model, four Basler cameras, and Mitsubishi PLCs.
- Leveraged proximity sensors to trigger a hydraulic lever for defect rejection, enabling real-time, in-line analysis of both inner and outer parts and reducing inspection time from one week of manual checks to immediate results significantly improving quality control and operational efficiency.
- Engineered and deployed five advanced Machine Vision Systems for metal component inspection, using OpenCV and Mitsubishi PLCs for sensor signal management. Delivered a robust PyQt desktop application for real-time monitoring, automating the detection of missing features in bearings and optimizing overall manufacturing productivity.

PROJECTS

Visgenix - Facial Attendance System

- Developed an AI-based facial attendance system using Raspberry Pi and facial keypoint clustering, achieving 96% accuracy and ensuring reliable performance across diverse lighting conditions; integrated Firebase cloud storage and created a PyQt desktop application for real-time attendance monitoring.
- Led the successful campus-wide adoption by training over 450 faculty members at Sri Ramakrishna Engineering College, streamlining attendance management and enhancing administrative efficiency.

Pothole Detection using Jetson Nano

- Developed a pothole detection system for public transport vehicles using Jetson Nano with a TensorRT-optimized single-stage object detection model and Neo6m GPS module for precise geolocation; created a Next.js website to display real-time locations and images of detected potholes, significantly enhancing road safety and maintenance efficiency.

Multi-Agent based Intelligent Traffic Management System

- Developed an intelligent traffic signal optimization system by creating individual agents at each signal that communicate with neighboring agents and forecast minute-by-minute traffic volumes; incorporated vehicle-level analysis to dynamically adjust signal timings for optimal flow, and simulated the solution using SUMO to validate performance improvements in reducing traffic signal wait times.

EDUCATION

Bachelor of Technology in Artificial Intelligence and Data Science

2021 - 2025

Sri Ramakrishna Engineering College

Coimbatore, Tamilnadu