

Sre Varshan

+91 96006 22497 | srevarshan9600622@gmail.com | [GitHub](#) | [LinkedIn](#) | Tiruchirappalli, Tamil Nadu

EDUCATION

B.Tech – Computer Science Engineering (AI & ML)

2023 – 2027

SRM Institute of Science and Technology, Trichy | **CGPA: 9.7 / 10 (Top 1% of cohort)**

TECHNICAL SKILLS

AI / ML: PyTorch, Hugging Face, TensorFlow, Scikit-learn, OpenCV, YOLO, Nvidia NGC

LLMs & GenAI: RAG Pipelines, LangChain, Prompt Engineering, LoRA Fine-Tuning, LLM APIs, FAISS, Ollama Local AI

Backend & Deployment: Python, Flask, FastAPI, REST APIs, Docker, AWS, Git, Linux, Firebase, n8n Workflow automation

Edge / Embedded: Raspberry Pi, NVIDIA Jetson Nano, ESP32, Arduino

Languages: Python, Java, C, SQL

EXPERIENCE

AI Product Developer | EmedLogix

Remote | Dec 2025 – Present

- Developed a production-grade, enterprise AI credentialing platform for a US healthcare application, hosting the full-stack infrastructure end-to-end on AWS.
- Built real-time OCR and document parsing pipelines with automated data extraction and intelligent autofill, reducing manual data entry by ~90%.
- Integrated live API-based data retrieval of US Govt End-points and autofill systems to streamline multi-step onboarding workflows.
- Designed a natural language database agent using **AWS RDS PostgreSQL**, enabling conversational querying of structured relational data.
- Contributed to multiple AI-driven features across the platform, focusing on scalability, reliability, and real-world usability.
- Deployed the containerized backend on **AWS Elastic Beanstalk** and provisioned the frontend via **AWS Amplify** to ensure real-world enterprise scalability and reliability

AIML Intern | Microsoft (via Edunet Foundation)

Remote | 2025

- Built an AI-powered real-time odor detection system using MQ3 and MQ9 gas sensors on ESP32, classifying air quality (Clean / Moderate / Foul / Very Foul) with a Random Forest model achieving 98% accuracy.
- Streamed live sensor data to Firebase Realtime Database and built a Gradio dashboard with automated sanitization alerts triggered on hazardous air quality detection.

PROJECTS

Banana Weevil Early Detection System | Patent Published | Edge AI · Acoustic Signal Processing · Raspberry Pi / Jetson Nano

- Built a dual-modal acoustic sensing system combining passive bio-acoustic detection and active percussive resonance analysis to identify internal weevil infestations non-invasively.
- Designed an edge AI pipeline with MFCC feature extraction and MobileNetV2 CNN — classifies infestation into 5 larval stages in real-time with >90% accuracy, fully offline on-device.
- Implemented end-to-end DL processing pipeline (audio acquisition → filtering → MFCC → CNN inference → display) on Raspberry Pi; optimizing deployment on NVIDIA Jetson orin Nano for lower latency.
- Estimated to cut banana crop yield loss from ~40% to <15% via early intervention; designed as a low-cost, cloud-free system for rural field deployment.
- Government Patent Published:** "System for Banana Weevil Detection using Dual-Mode Acoustic Sensing" (Govt. of India | App No. 202541116228 A)

NutriMinds AI | Mobile Application | VLM · LoRA Fine-Tuning · Hugging Face Spaces · Edge AI

- Developed as a mobile application where users capture food labels and medical reports to receive personalized nutritional analysis and health recommendations.
- OCR and database processing handled via cloud endpoints hosted on Hugging Face Spaces; fine-tuned Mistral-7B using LoRA (Hugging Face PEFT) on Open Food Facts data, achieving high accuracy in nutritional reasoning.

- Integrated Tamil language support via GoogleTranslator for regional accessibility; Qwen2.5B VLM handles image-based text extraction on the cloud backend.
- Research paper under publication in Springer ICDAM conference, documenting system architecture and model performance findings.
- Currently migrating system to fully on-device inference using optimized Small Language Models (SLMs), targeting low-parameter efficient models for mobile edge AI improving robustness and scalability for offline use.

ACHIEVEMENTS & RECOGNITION

- **Government Patent Published** – "System for Banana Weevil Detection using Dual-Mode Acoustic Sensing" | App No. 202541116228 A | Govt. of India
- 1st Place – Spectrum Hackathon (VIT Chennai)
- 1st Place – Kalasalingam University Hackathon
- Maintained 9.7+ CGPA consistently; ranked Top 1% of cohort at SRM Trichy