

Jeevakamal K R

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PROFESSIONAL SUMMARY

AI/ML Engineering Intern and B.Tech student with hands-on experience building production-grade AI systems. Skilled in conversational AI, hybrid RAG pipelines, voice AI, and computer vision using PyTorch, FastAPI, and Docker. Built and deployed a medical triage chatbot and TOD voice assistant for a live healthcare platform. Eager to engineer high-performance AI systems in a fast-paced environment.

SKILLS

- **Languages:** Python, C, C++, JavaScript, MATLAB
- **AI / ML Frameworks:** PyTorch, TensorFlow, HuggingFace, Scikit-learn, FAISS, BM25, PubMedBERT, Llama-3.1, LoRA, Gemini
- **Voice AI:** OpenWakeWord, Whisper, pyttsx3
- **Backend & Deployment:** FastAPI, Flask, React, Docker, NGINX, Redis, SQLite, GitHub Actions, JWT
- **Tools:** Git, GitHub, CUDA

EDUCATION

- **Amrita Vishwa Vidyapeetham** 2023 – 2027
B.Tech in Artificial Intelligence CGPA: 8.53 / 10.0 Coimbatore, India
- **Mahatma Montessori School CBSE** 2023
Class XII – 92% Class X – 96.4% Madurai, India

EXPERIENCE

- **AI Trainee (Intern) — Product Development** Mar 2026 – May 2026
UVS Cube Infotech, Madurai, India
Tools: FastAPI, FAISS, BM25, Redis, Docker, NGINX, OpenWakeWord, Whisper, Llama-3.1, pyttsx3, GitHub Actions
 - Built a medical triage chatbot with hybrid RAG pipeline (FAISS + BM25 + PubMedBERT) and FHIR R4/ABDM integration for real-time patient history injection into LLM prompts.
 - Engineered deterministic severity scoring engine (0–100) with red-flag detection and Triple-Gate output safety guaranteeing zero diagnostic statements.
 - Developed a voice assistant with Whisper ASR → Llama-3.1 NLU → pyttsx3 TTS pipeline and voice-to-UI control for hands-free healthcare app navigation.
 - Deployed both systems to production via Docker + NGINX + GitHub Actions CI/CD with Redis session caching and Groq → Gemini LLM failover.

PROJECTS

- **EV Range Prediction using Physics-Informed Neural Networks (PINNs)** Apr 2025
Tools: Python, PyTorch, LSTM, PINNs, SUMO Simulation, MLflow, Weights & Biases
 - Built a physics-informed LSTM model for EV range prediction under real traffic, achieving <5% RMSE.
- **English to Tamil Translation using LLaMA-3.1 LoRA Fine-Tuning** Oct 2025
Tools: LLaMA-3.1 8B (4-bit), Unsloth, LoRA, PyTorch, HuggingFace Datasets, TRL (SFTTrainer)
 - Fine-tuned LLaMA-3.1-8B with 4-bit LoRA on OPUS-100 for Tamil translation and evaluated using BLEU and semantic similarity.
- **FedRetinaNet – Privacy-Preserving Insulator Defect Detection** Mar 2026
Tools: RetinaNet, PyTorch, Federated Learning (FedAvg), ResNet-50 FPN V2, MobileNetV3, COCO
 - Developed a federated RetinaNet framework achieving mAP@50 of 0.91 while retaining 97% of centralized performance.
- **Digital Twin for Urban Microgrid Resilience** Mar 2026
Tools: Python, CNN-BiLSTM, EKF, MPC (PuLP), MQTT, FastAPI, Streamlit
 - Designed a cyber-physical digital twin with CNN-BiLSTM forecasting, MPC dispatch, and EKF-based state estimation.

PUBLICATIONS & AWARDS

- **Bio-Inspired Snake Robot for Real-Time Victim Detection in Disaster Environments** Mar 2026
- **Emotion-Aware Image Captioning using Deep Learning** Mar 2026
- **Solar Powered Agricultural Robot for Irrigation** Feb 2026
- **Best Paper Award – SISCON** Dec 2025

ADDITIONAL INFORMATION

Languages: English (Professional), Tamil (Native), Telugu (Basic – spoken & comprehension)