Maadhav V H

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Education

KPR Institute of Engineering and Technology Coimbatore, Tamil Nadu

B.E. Electronics & Communication Engineering, Honours in IoT for Smart Systems – CGPA 8.43/10 *Sep 2024 – Jun 2028*

- Coursework: Signals & Systems, Digital Signal Processing, Digital Electronics, Semiconductor Devices, Antennas

Experience

Software Engineering Intern, Embedded Systems Dec 2025 – Jan 2026

Enthu Technology Solutions India Pvt Ltd *Coimbatore, Tamil Nadu*

- Developed data-acquisition software interfacing sensors and wireless modules over UART, SPI and I^2C for real-time monitoring.
- Built cloud-connected pipelines over Wi-Fi, Bluetooth and LoRaWAN; debugged and optimized system software for reliability.

Machine Learning Intern Aug 2025 – Oct 2025

PhobosQ *Coimbatore, Tamil Nadu*

- Built Scikit-learn pipelines on clinical sensor data and compressed models for inference on resource-constrained hardware.

Projects

VehicleGPT – Offline Language Model over In-Vehicle Signal Data Oct 2026

Team lead, Tata Elxsi Teliport Season 4 (Case 5) Python, llama.cpp, CAN, COVESA VSS

- Led a three-person team designing an offline assistant for a car's own logged signals: a small language model routes each question to verified tool calls on a read-only store fed by a SocketCAN listen-only tap and a VSS catalogue.
- Built the embedded-budget benchmark: 12 quantized models in an enforced 2-core, 2 GiB, no-swap container, 2,400 checksum-audited results; MiniCPM5-1B Q8_0 reached 82% accuracy at 1.74 s median latency and 1.44 GB peak memory.
- The team's hybrid rules-plus-model pipeline lifted accuracy from 29.5% to up to 95.5% on 200 questions, all schema-valid.

DT Guardian – Edge Battery and Load Controller for Distribution Transformers Oct 2026

Schneider Electric Yuva Yodha, prototype round; co-developed with one teammate Python, MILP (PuLP/HiGHS)

- Built an offline-first edge controller for a 200 kVA transformer: an IS 2026-7 thermal model drives MILP dispatch of battery storage, EV charging and pump loads, with a fail-safe fallback when the forecast or solver fails.
- In a simulated 6-hour battery-stressed outage, cut essential energy not served from 121.2 to 56.7 kWh (−53% vs. no control, −31% vs. battery-only); conformal load forecaster held 80.2% coverage at 80% nominal; 365 automated tests.

DriftSense – Navigation-Error Recovery for SEM Wafer Inspection Sep 2026

Runner-up, SEMICON India Hackathon 2026, Applied Materials track; team lead Python, PyTorch, OpenCV

- CPU-only pipeline that finds a reference pattern in SEM frames under unknown 8–12× zoom and ±5° rotation, or rejects it; a siamese correlation CNN (1.02M params) with ZNCC checks reached F1 0.91 and AUC 0.99 on 2,250 pairs.
- Fourier-domain CAD-to-SEM registration put every pattern within 1 px (median <0.03 px) on 600 pairs.

Mouna – Silent Lip-Reading to Speech, Offline on a Phone NPU Oct 2026

iQOO Hackathon 2026, Grand Finale, Bengaluru PyTorch, ONNX, Qualcomm QNN, Kotlin

- Built the prototype that lets a person speak by mouthing words: MediaPipe lip landmarks with DTW few-shot recognition, an evaluation harness, and an Android probe capturing 25 fps lip crops with offline voices.
- Ported the LipLearner encoder from Core ML to PyTorch and ONNX for the Qualcomm NPU; a confidence gate cut false utterances from 23% to 7%, and lip-velocity features raised Kannada top-1 accuracy from 71.0% to 75.3%.

Achievements

SEMICON India Hackathon 2026 – Runner-up (Rs. 75,000), Applied Materials track; 1 of 5 grand finalists — Sep 2026

Caterpillar Tech Challenge 2026 – Top 10 of about 1,500 teams; Grand Finale, Chennai; interview shortlist — Jun 2026

Atomic Hacks (IIT Bombay × Rosatom) – Finalist — 2026

Arm × Bharat AI-SoC Challenge 2026–27 – Shortlisted, on-device threat detection track; team lead — Oct 2026

iQOO Hackathon 2026 – Grand Finale, 48-hour on-site build, Bengaluru — Oct 2026

ISRO Bharatiya Antariksh Hackathon 2026 – Grand Finale shortlist — Aug 2026

Qualcomm Snapdragon Multiverse Hackathon – Selected for on-site build, Qualcomm Bengaluru — Jul 2026

Health-a-thon 2026 – Top 150 of 450+ teams, Phase 2 build sprint — Oct 2026

Ossomehacks 2.0, SRM IST Chennai – Top 3, Web3 track — Mar 2025

Technical Skills

Languages	C, Python, Java, SQL, MATLAB, JavaScript
Embedded & Automotive	UART, SPI, I^2C, CAN/SocketCAN, COVESA VSS, Wi-Fi, Bluetooth, LoRaWAN, Linux, ARM64
Edge AI & ML	llama.cpp/GGUF, ONNX Runtime, Qualcomm QAIRT, PyTorch, YOLO, Scikit-learn, XGBoost
Signal Processing	DSP, OpenCV, image registration, Fourier methods, RF/antenna design (CST), MILP
Tools	Git, GitHub Actions CI, pytest, Docker, OOP, data structures and algorithms
Credentials	Bosch EMS & Vehicle Networking; NPTEL Industry 4.0 & IIoT; AWS AI & ML Scholars 2026; IEEE member