

MALLURI SAI RAGHU

CAREER OBJECTIVE

Embedded Systems Engineer with hands-on experience in ESP32, Raspberry Pi, CAN, and sensor fusion. Looking to build production-grade embedded software where hardware meets real-time constraints.

CONTACT

- +91 9963174618
- sairaghu971@gmail.com
- linkedin.com/in/sai-raghu-malluri
- Vijayawada, Andhra Pradesh

EDUCATION

B.tech in Electrical & Electronics Engineering
Koneru Lakshmaiah Education foundation
2024 - 2027

Diploma in Electrical & Electronics Engineering
Kallam Haranadhareddy Institute of Technology
2021 - 2024

Secondary School Certificate
JMJ EM High School
2021

TECHNICAL SKILLS

- Languages: C, Embedded C, Python, Micro Python, Kotlin, MATLAB
- Embedded systems & Hardware: ESP32, Raspberry Pi 5, ARM Cortex-M, Sensor Fusion, Real-Time Systems
- Communication Protocols: UART, SPI, I2C, CAN Protocol
- Embedded & IoT: Embedded Linux, IoT Development, AUTOSAR
- Tools: Thonny, VS Code, GitHub, CloudFlare, Android Studio

INTERNSHIP

Industrial Trainee – Electrical Department | South Central Railway, Vijayawada Nov 2023 – May 2024

- Completed 6-month industrial training gaining hands-on exposure to electrical systems and maintenance procedures.
- Observed and documented railway electrical operations, safety protocols, and industrial workflows.
- Applied classroom knowledge to real-world electrical infrastructure in a high-stakes operational environment

PROJECTS

Campus Delivery Robot | ESP32 · GPS · Ultrasonic Sensors · Cloudflare

- Built a campus delivery robot on ESP32 with GPS path tracking, IMU-based orientation, and ultrasonic obstacle detection.
- Fused data from NEO-M8N and MPU6050 to maintain navigation accuracy under real-time constraints.
- Wrote collision avoidance logic that reacts to dynamic obstacles without halting the delivery path.
- Filed and published a patent: "Sensor Fusion: Campus Delivery Robot."

EV Collision Warning System | Raspberry Pi 5 · ToF · Radar · Machine Learning

- Built a real-time collision warning system on Raspberry Pi 5 using Time-of-Flight and radar sensors fused for obstacle detection.
- Trained an ML model to classify collision risk and improve detection accuracy beyond threshold-based triggers.
- Drove a vibration motor for haptic alerts — giving drivers instant, eyes-free warnings without a display.
- Targeted EV safety specifically, where quieter operation makes proximity sensing more critical.

ADAS Phantom Braking Mitigation System | Sensor Fusion · Computer Vision · Radar

- Solved shadow-triggered false braking by cross-validating radar returns against ToF depth and camera frames before any speed intervention.
- Built a temporal filter that tracks detection consistency across 50ms windows — transient signals get suppressed, persistent ones trigger response.
- Tuned adaptive speed control across three lighting profiles: direct sun, overcast, and low-angle glare, each with separate confidence thresholds.