SIVA SAI YARAJODU
Embedded Developer | Electronics & Communication Engineer Graduate 2025
✉ sivasaii3512@gmail.com | 📞+91 8985932026 | 📍 India | 🔗 sivasai-yarajodu

WORK EXPERIENCE

Electronics Engineer @Crimson Innovative Technologies Pvt Ltd – [Hyderabad]
Intern (Jan 2025 – Mar 2025) | Full-Time (Apr 2025 – Present)

- Hands on Experience in **Embedded C/C++** programming with experience in driver development for **SPI**, I²C, UART, **CAN**, and GPIO on ARM Cortex and ESP32/STM32 platforms.
- Hands-on expertise in sensor and imaging system integration, including cameras (ESP32-CAM), **RFID**, IMU, and environmental sensors with real-time data processing.
- Experience in RTOS (**FreeRTOS**) and Linux-based embedded systems, including **device drivers** and multitasking applications.
- Skilled in schematic design and **PCB layout** (**Altium**, KiCad, OrCAD) with focus on low-power, high-reliability embedded boards for industrial use.
- Strong knowledge of power management and **BMS** systems, including **DC-DC converters**, Li-ion protection circuits, and energy-efficient embedded designs.
- Proficient in wireless communication protocols (**Bluetooth**, Wi-Fi, MQTT, **TCP/IP**) for secure data transmission and remote system monitoring.
- Experienced in system bring-up, debugging, and validation using **oscilloscope**, logic analyzer, **JTAG**/SWD debuggers, and hardware-software co-debugging tools.

PROJECTS

Smart Home Automation System

- **Designed** schematic and **PCB layout** matching circuit design responsibility.
- Selected components based on specifications, **availability**, and cost.
- **Programmed** microcontrollers ESP32 in C/C++, implementing sensor/wireless data communication.
- Assembled and tested prototypes, debugged faults with **oscilloscope** and **multimeter**.
- Maintained **project documentation**, BOMs, and test records.
- Managed basic EMC/safety considerations and soldered/reworked boards as needed.

EdgeVision: AI-Powered Object Detection on ESP32-CAM

- Built an Edge Impulse ML **pipeline** on ESP32-CAM for object **detection** with audio feedback, integrating Wi-Fi video streaming and **optimized** on-device inference for smart **IoT** applications.

EDUCATION

BACHELOR OF TECHNOLOGY IN ELECTRONICS AND COMMUNICATION ENGINEERING
G Pulla Reddy Engineering College | Kurnool | AP   MAY 2025
DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING
GMR Polytechnic College | Madanapalle | AP   JUNE 2022

TECHNICAL SKILLS

- **Hardware Design: Schematic** Capture, Multi-layer PCB Design, **High-Speed Design**, Power Supply Design, Analog, Digital, **Load Drivers integration.**
- **EDA Tools: Altium Designer**, **OrCAD**
- **Microcontrollers: STM32**, **Raspberry PI**, ESP32, ATmega328P, PIC18F25K80
- **Firmware:** Embedded C, Arduino IDE, **FreeRTOS**, Bare-metal Drivers
- **Interfaces:** RS232, **RS485**, UART, **SPI**, I2C, CAN, BLE, WiFi, **MODBUS**
- **Testing: Board Bring-Up,** Load Testing, **Debugging**, Root Cause **Analysis**
- **Design Concepts**: **DFM**, DFA, Signal Integrity, Impedance Matching, **EMI/EMC**
- **Soft Skills:** Collaboration, **Documentation**, Problem-solving, Adaptability.

ARCHIVEMENTS

- Finalist at **IEEE** YESIST12 (2024) for developing a **real-time** IoT-based environmental **monitoring system**, recognized among the top 1,000 global **innovations**.