Gali Sri Harsha

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LinkedIn

Professional Summary

Embedded Systems Engineer with hands-on experience in microcontroller-based solutions, IoT devices, and real-time monitoring systems. Skilled in firmware development, hardware-software integration, low-power IoT design, and custom embedded libraries. Specialized in sensor interfacing, wireless communication, and mission-critical system prototyping for applications in smart cities, energy monitoring, robotics, and safety systems.

Technical Skills

- Programming Languages: C, Embedded C, C++.
- Platforms: ESP32, STM32, Vega Aries V3 (RISC-V), Raspberry Pi, Arduino.
- Hardware Debugging Tools: Oscilloscope (signal analysis), Digital Multimeter, Dual DC Power Supply, Function / Pulse Generator.
- Peripherals & Interfaces: UART, SPI, I2C, ADC, PWM, GPIO.
- Connectivity: Wi-Fi, BLE, GSM (SIM800L, A9G).
- Development Tools: STM32CubeIDE, Keil, Eclipse, Arduino IDE, LVGL, Linux.
- Automotive & Protocols: CAN, UDS, AUTOSAR, CAPL scripting, CANalyzer.
- Area of Expertise: Sensor Fusion & Calibration, Firmware Architecture Design, Power-Efficient IoT Systems, Real-Time Embedded Communication, Linux-based Development & Debugging

Experience

Centre for Development of Advanced Computing (C-DAC), IIT-G **November 2024 to Present**
Project Associate (Embedded Systems Firmware Developer)

- Developing custom firmware and hardware-software solutions for smart infrastructure, safety, and IoT systems.
- Designing optimizing embedded drivers, communication stacks, and real-time applications for production-ready deployment.

Shikhara Embedded Solutions Private Limited **July-2023 to December 2023**
Intern Automotive Embedded System Engineer

Dashboard Design Using CAN Internship Project

- Built a dashboard display system utilizing CAN communication to receive and visualize vehicle signals.

AUTOSAR Fundamentals

- Learnt **AUTOSAR** software architecture: Basic Software Layer, Communication Stack, and Diagnostic Stack. And learned the fundamentals of **UDS** services and diagnostic communication flows.

In Progress Projects (C-DAC)

DosFET – Wireless Radiation Dosimeter System

- Designing and developing BLE-enabled radiation dosimeter nodes to transmit CPM data and undocking event logs in real time.
- Engineered a Raspberry Pi–based central hub to collect, process, and publish dosimeter data via MQTT.

Automatic Meter Reading (AMR) System

- Designing and implementing a complete AMR system using the Vega microcontroller for smart gas flow monitoring.
- Integrated GSM (SIM800L), tilt, Hall-effect, and vibration sensors for tamper detection and accurate metering.
- Developed cloud connectivity and secure API-based communication for real-time remote meter data access.

Custom Vega RISC-V Libraries

- Architected and developed a lightweight SPI TFT display driver for ILI9341 on a RISC-V platform.
- Implemented display rotation, touch calibration logic, and optimized graphics routines for efficient rendering.

Robotic Arm Control Unit

- Designed and developed firmware for a multi-joint robotic arm using SG90 servo motors and 28BYJ-48 stepper motors.
- Implemented Wi-Fi–based control architecture enabling wireless operation and modular expansion.
- Developed scalable control logic for coordinated multi-actuator movement.

Fingerprint Attendance System

- Developed a standalone biometric attendance system using ESP32 and an R305 fingerprint sensor.
- Designed embedded firmware for fingerprint enrollment, authentication, and timestamped logging.
- Integrated Touch based user interface and Wi-Fi connectivity for remote attendance data access.

Certificates

- 1st International Indigenous Sensors and Actuators Development for IoT Ecosystem
- Embedded system course completion certificate from **VECTOR INDIA** Hyderabad.

Education

Bachelor of Technology (B.Tech) – Electronics & Communication Engineering
Prakasam Engineering College | Graduated: 2023