SRIDHAR M

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Technical skills

Languages : C, C++, Python

Controllers: Arduino,Pic,ESP32&ESP8266,STM32

Kernal: Linux

Iot protocols: Mqtt(mosquitto,shiftr),GSM, LoRa

Communication protocol :UART, I2C, SPI, RS232

Tools

Software Tools : Mplab,Keil Vision.

Simulation Tools: LT Spice, Xlinix,EasyEDA,Proteus

Hardware Design: PCB Design.

Responsibilities

Developed and Calibrated Autonomous Control Systems: Engineered control algorithms and integrated 15+ hardware components, achieving a 25% improvement in system efficiency through precise calibration

Led Comprehensive Testing and Optimization: Spearheaded functional, regression, and performance testing, enhancing system reliability by 30% and reducing testing time by 20% through optimized testing workflows

Collaborated for Efficient Issue Resolution: Collaborated with cross-functional teams to resolve 40+ system issues, maintaining rigorous records and achieving a 95% on-time resolution rate

Education

B.E. in Electronics and Communication Engineering (ECE)

Thanthai Periyar Government Institute of Technology, Vellore

Graduated: 2025 | CGPA: 7.6/10

Internships

1.Firmware Trainee Intern
Blackfox Embedded Solutions, Erode
May 2024 - August 2024

- Developed **MQTT-based communication modules** with **GSM** integration, achieving a 40% increase in data transmission reliability for IoT devices. Integrated **call and SMS synchronization** via an **external interrupt** on the GSM RI pin using a BC547 transistor.
- Optimized firmware for real-time data by reducing latency 25%, significantly enhancing responsiveness in critical embedded applications

2.Embedded Engineer Intern
Entsein Robotics and Automation, Chennai
December 2024 – January 2025

- Explored robotics and embedded systems with a focus on **motor drivers** and real-time communication.
- Worked with EL7 AC servo drivers using **EtherCAT protocol (PySOEM)** to send commands and control AC servo motors.

Projects

1. **Landmine Detector Robot**
   Developed a Bluetooth-controlled mobile robot with integrated metal detection for landmine identification. Utilized **Arduino Uno** and **L293D** shield to control four BO motors via the Blynk app, achieving 85% detection accuracy with **HC-05**-based wireless control.

2. **AI-Based Garbage Detection and Bin Level Monitoring**
   Designed a smart waste management system integrating AI for real-time waste classification (biodegradable vs. non-biodegradable) using camera-based inference. Implemented **servo-actuated** segregation and **ESP32-**powered bin level detection, with real-time updates via **web server** interface.

3. **Material Positioning System Using IR Sensors**
   Engineered a precise material positioning setup using calibrated **IR sensors with ESP32.** Achieved 30% accuracy improvement and reduced processing lag through optimized real-time data transmission.

4. **Handshake Robot with Dual-Mode Navigation and Event Display**
   Engineered a gesture-based handshake robot with dual-mode control—manual via **HC-05 Bluetooth** and autonomous navigation using object avoidance**(HC-Sr-04)**. Achieved 95% gesture recognition accuracy and improved navigation speed by 25%. Integrated **OLED** display and speaker on **Raspberry Pi** for interactive event feedback.