

## SRIDHAR M

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### Technical skills

**Languages :** C, C++, Python, HTML(basics), Verilog

**Controllers:** Arduino, Pic, ESP32 & ESP8266

**Kernal:** Linux

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

**Communication protocol :** UART, I2C, SPI

### Tools

**Software Tools :** Mplab, Keil Vision.

**Simulation Tools:** LT Spice, Xilinx, EasyDA, Proteus

### 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: 7.5/10

### Internships

#### 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

### Projects

#### 1. Bluetooth Car with Metal Detector | Year: 2022

Developed a mobile-controlled car featuring metal detection, achieving 85% detection accuracy and reducing response time by 15% with Blynk connectivity.

**Role:** Oversaw firmware design and coding for hardware and Bluetooth communication, enhancing system responsiveness by 30% through testing and fine-tuning.

#### 2. Garbage Detection and Bin Level Indication Year: 2023

Built an AI-powered waste management system utilizing ESP32, reaching 90% classification accuracy and automating 40% of waste sorting.

**Role:** Directed the integration of servo controls for waste classification based on AI data, and implemented bin level monitoring displayed in real-time on a web server.

#### 3. Material Positioning Using IR Sensor | Year: 2024

Designed a positioning system with IR sensors, improving accuracy by 30% and reducing processing delays by 20% through real-time ESP32 streaming.

**Role:** Managed sensor calibration and ESP32 setup to ensure precise positioning and consistent monitoring.

#### 4. Autonomous Robot with Object Avoidance and Event Display | Year: 2024

Created an autonomous robot with gesture recognition (95% accuracy) and object avoidance, improving navigation speed by 25%.

**Role:** Coordinated programming for handshake and object avoidance, and supervised integration of OLED displays, speakers, and Raspberry Pi for event display.