

SAID ROSHAN K

ELECTRONICS & EMBEDDED SYSTEMS ENGINEER | ROBOTICS & AUTOMATION

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Electronics and Embedded Systems Engineer with hands-on experience in microcontrollers, motor control, sensor integration, and IoT systems. Strong in building, debugging, and deploying real-world embedded solutions, from circuit-level work to firmware and system integration.

CORE SKILLS

- **Embedded Systems :** ESP32, ATmega, Embedded C, Arduino Framework, Timers, Interrupts, UART, I2C, SPI
- **Electronics & Hardware:** Various Motors, Motor Drivers, Power Supplies, Converters, Sensors
- **Robotics & Control:** Motor control logics, Closed-loop control, Mobile robots, ROS2(mapping & navigation)
- **IoT & Automation:** WiFi/Bluetooth communication, IoT systems, n8n automation
- **Design & Prototyping:** SolidWorks, 3D Printing, Rapid prototyping & debugging
- **Software:** C/C++, Python, Embedded C, Linux

PROFESSIONAL EXPERIENCE

Makemybot Pvt. Ltd. (In JV with Terarobots India)

Apr 2025 - Jan 2026

Junior Electronics and Robotics Engineer

- **Autonomous Navigation & SLAM:** Implemented SLAM (Simultaneous Localization and Mapping) for environment mapping and localized navigation; utilized Gazebo and RViz for simulation, testing, and sensor data visualization.
- **Systems Automation:** Engineered and deployed a production-grade n8n WhatsApp automation system, integrating APIs to streamline company communications and operational workflows.
- **Infrastructure Management:** Configured and maintained a dedicated in-office server to support internal development projects and local data management.
- **Advanced Prototyping:**
 - Designed and configured Drone flight controllers and power distribution systems for stable flight performance.
 - Developed a quadrupedal "Robo-Dog" using high-torque servos, focusing on gait logic and mechanical stability.
 - Managed hardware maintenance and software calibration for an autonomous delivery robot housed within the facility.
- **IoT & Embedded Design:** Developed multiple IoT solutions involving sensor fusion and wireless telemetry; 3D modeling and rapid prototyping of custom mechanical enclosures.
- **Technical Representation & Leads:** Represented the company at major Kochi Tech Expos; conducted live demonstrations of robotics products, successfully converting technical interest into qualified business leads.
- **Mentorship & Content:** Managed STEM summer camps and mentored internship students on electronics and robotics; produced and edited technical video content via DaVinci Resolve.

INTERNSHIPS & TRAINING

Trycode Innovations, Calicut

July 2024 – Dec 2024

Embedded Systems Training Internship

- Firmware Development: Programmed ESP32/ESP8266 microcontrollers for wireless data transmission and server communication.
- Sensor Integration: Gained hands-on expertise in interfacing diverse sensors with microcontrollers for accurate data acquisition.

Keltron Controls, Aroor

May 2023

TECHNICAL PROJECTS

Production-Grade WhatsApp Automation & Data Pipeline

- Developed an end-to-end automation workflow using n8n to capture customer inquiries via WhatsApp Business API.
- Engineered a real-time data pipeline to log and synchronize user interactions into a centralized cloud-based storage system (Google Sheets).
- Optimized operational efficiency by eliminating manual data entry, ensuring accuracy in lead tracking and retrieval.
- Technologies: n8n, WhatsApp API, Webhooks, Google Workspace Integration, JSON.

IoT-Based Pothole Detection & Filling System

- Designed an IoT controlled vehicle using ESP32 and Ultrasonic sensors to detect and fill road hazards.
- Developed a custom dispensing mechanism with Servo motors for automated material repair.

V2V Communication via LoRa

- Implemented a long-range communication protocol for real-time safety alerts between vehicles using LoRa modules and Accelerometers.

Smart Trolley with Automatic Billing

- Built an RFID-integrated shopping trolley that updates a digital bill in real-time, reducing checkout congestion.

EDUCATION

Government Engineering College, Idukki

Dec 2020 - Dec 2024

Bachelor of Technology

Electronics and Communication Engineering

Rahmania HSS, Calicut

2017 - 2019