

AKARSH S M

📍 Bangalore, Karnataka ✉ akarshsm06@gmail.com ☎ (+91) 6364825932 🌐 <https://www.linkedin.com/in/akarsh-s-m-00b8471b8/>

PROFESSIONAL SUMMARY

Embedded Engineer with hands-on experience of 3 years in Embedded Linux, RTOS (FreeRTOS), and low-level driver development across platforms including Raspberry Pi, i.MX6ULL, Beagle Bone, ESP32, and STM32. Skilled in UART, SPI, I2C, GPIO interfacing, and communication protocols such as MQTT and Modbus. Experience building IoT gateways and EV charging systems, with strong focus on hardware-software integration, debugging, and real-time system design.

EXPERIENCE

Embedded Developer

Racanaa Energy Solutions Private Limited

March 2025—Present, Bangalore, Karnataka

- Led end-to-end development of edge computed based polyphase smart energy meter, improving data integrity and offloading computation from the cloud through optimising edge processing
- Designed and developed a universal smart HVAC control unit capable of interfacing with multiple HVAC systems, driving energy optimisation and reducing overall power consumption.
- Worked on IoT gateway systems with embedded Linux build, including device driver, web server integration, and system core application.
- Experienced with hardware platforms including Nordic Semiconductor nRF52, STMicroelectronics STM32, Espressif Systems ESP32, and NXP Semiconductors i.MX6ULL, along with 2-layer and 4-layer PCB design.
- Proficient in KiCad, Altium Designer, and SolidWorks for hardware and mechanical design.
- Skilled in firmware development using C, Python, and Embedded Linux, with experience in STM32Cube, Yocto Project, low-level driver development, and Espressif IDE.
- Involved in complete product lifecycle activities including design, development, maintenance, testing, and documentation for quality management systems.
- Worked with communication protocols and technologies including UART, SPI, Modbus, RS485, RS232, MQTT, BLE, Wi-Fi, LTE, Thread, Matter, LoRa, and other IoT/industrial communication interfaces.

Electrical & Electronics Engineer

Mysuru Green Technologies Private Limited

June 2023—February 2025, Mysore, Karnataka

- Led the development of a UPI- based EV charging station, enhancing the user-machine interface and payment integration workflow.
- Designed and developed scalable microgrid control system for efficient energy management and distribution power applications.
- Worked on energy analytics for commercial and industrial sectors, focusing on energy optimization and energy modelling to support net zero compliance initiatives.

PROJECT

IoT based Portable Renewable Microgrid

- Designed and developed the complete system architecture, including hardware design, firmware development, integration and testing.
- Developed multilayer PCB designs for high speed and analog circuit with a focus on reliability and scalability.
- Selected among the top 12 innovations in Solar decathlon India, the product was virtually inaugurated by Nitin Gadkari during the international conclave event.
- Secured Rs 3 Lakh in funding through Karnataka Innovation AND Technology Society (KITS) and New Age Incubation Network (NAIN).

EDUCATION

Bachelor of Engineering – Electrical and Electronics Engineering

The National Institute of Engineering (NIE) - Mysore · 2023

SKILLS

- Embedded & IoT: Embedded C, Python, Embedded Linux, STM32, ESP32, nRF52, i.MX6ULL, Yocto Project, Device Driver Development, OTA Systems, IoT Gateway Development.
- Protocols & Connectivity: UART, SPI, I2C, Modbus, RS485, RS232, MQTT, BLE, Wi-Fi, LTE, LoRa, Thread, Matter.
- Hardware Design: Multilayer PCB Design (2 & 4 Layer), Analog & High-Speed Circuit Design, Power Electronics, Microgrid Systems, EV Charging Systems
- Tools & Platforms: KiCad, Altium Designer, SolidWorks, STM32CubeIDE, Yocto Project, Git, Linux
- Leadership & Product: Product Development, Technical Documentation, Fundraising, Team Collaboration, Communication, Partnerships, Testing & Validation, International Collaboration