MADHAV SUTTRAWAY

Pune, Maharashtra

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16 Nov '98

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LinkedIn

OBJECTIVE

Aspiring to leverage my expertise in IoT development, embedded systems, AI, and machine learning to contribute to innovative and impactful projects in a dynamic and collaborative environment. With a strong foundation in mechanical engineering, hands-on experience in real-time systems, and a passion for problem-solving, I am eager to drive technological advancements and deliver solutions that enhance user experiences, safety, and efficiency in the automotive, IoT, and AI-driven sectors

EDUCATION

B.Tech, Electronics & Mechanical — Jan 2021
N K Orchid College of Engineering & Technology,Solapur — 8.06

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Pune Board — 2017
H.D Jr. College Arts & Science, Solapur — 47.08%

Pune Board — 2015
Haribhai Deokaran High School, Solapur — 48.40%

WORK EXPERIENCE

IOT developer , kloudq technologies pvt ltd, Pune — Jan 2021 — May 2021

Embedded Manual Testing Engineer , Coulomb Li-Tech., Mumbai — Jun 2021 — Nov 2022

Embedded AI - RnD Engineer., Yellow Matrix, Pune — Dec 2022 — Aug 2024

IoT Developer, Neurotech Designs pvt ltd, Pune — Aug 2024 — Present

Embedded Engineer as a Freelancer, Robokidz Eduventures Pvt Ltd, Pune

PROJECTS

Smart Energy Meter — Apr 2025 — Jun 2025

Developed a smart monitoring system using a **three-phase DIN RAIL energy meter** and **ESP32**. Data was collected via **RS-485 (Modbus RTU)** using a MAX485 transceiver, including voltage, current, power, and total energy. The ESP32 stored values locally in **LittleFS** for offline logging and pushed structured JSON packets to **Firebase Realtime Database** for cloud monitoring. Implemented **secure HTTPS communication**, configurable data intervals, and real-time dashboards. The project highlighted expertise in **industrial protocol handling, IoT gateways, embedded firmware, and cloud synchronization**, delivering a scalable solution for energy management.

Smart Home Automation System — Jan 2025 — Present

Developed a **master–slave smart home automation system** using ESP32 with **ESP-NOW** protocol for fast, reliable, and Wi-Fi-independent communication. The **master node** received commands from users via **mobile application, IR remote, and physical touch buttons**, filtered and validated the data, then instructed multiple **slave nodes** to control appliances such as Lights, dimmers, fans, RGB lights,TVs, and ACs. Slave nodes executed ON/OFF switching and reported status back to the master. Designed for scalability, the system demonstrated strong skills in **wireless protocols, embedded firmware, multi-node IoT architecture, and real-time appliance control**, enabling a robust and user-friendly home automation solution.

Self Balancing Vehicle (segway) — May 2021 — Nov 2021

The Vehicle is kept balanced through the correction provided by the wheels which goes against the direction of fall. The current orientation of the Vehicle is monitored by the MPU6050 sensor. The orientation is constantly compared to a desired orientation through a PID loop. The Vehicle is steady when the loop output is zero
Developed a project

Smart Plug — Jan 2025 — Mar 2025

This project involved the design and implementation of a Wi-Fi and BLE-enabled **Smart Plug** using the ESP32 microcontroller to control and monitor household electrical appliances both **offline and online**. The system was designed to seamlessly switch between local control and cloud connectivity, ensuring reliability under all conditions.

Real-Time Drowsiness Detection and CAN Signal Alert System Using Computer Vision and ESP32(Automotive)

Apr 2024 — Apr 2024

This project is a real-time drowsiness detection system using computer vision and deep learning, designed to enhance safety by monitoring the user's eye movements. The system captures video from a webcam and analyzes the Eye Aspect Ratio (EAR) to detect if the user's eyes are closed, indicating drowsiness. Upon detection, the system sends alerts to an ESP32 server, which then generates a CAN signal using a TJA1050 CAN transceiver module. The program employs OpenCV for video capture, Dlib for facial landmark detection, and communicates with the ESP32 to trigger CAN signals, ensuring effective fatigue monitoring and prevention

Neo-Pixel Smart RGB LED

Jun 2025 — Jul 2025

This project involved the development of a BLE-enabled smart RGB LED lighting system using the ESP32 microcontroller and addressable Neo-Pixel LEDs. The system communicates with a mobile application via Bluetooth Low Energy (BLE), using **end-to-end encoded and decoded data** transmission to ensure secure and reliable control. Features include real-time brightness adjustment, color selection, custom animation playback, and music-reactive lighting using a built-in microphone. Lighting patterns and user preferences are stored in **LittleFS** on the ESP32 for persistent, offline-capable operation. The project highlights core competencies in BLE communication, embedded system design, secure data handling, and efficient local storage management.

AWARDS

kpit sparkle 2023 , kpit technologies

19 Mar 2023

Our project was selected in KPIT sparkle 2023 as a finalist.

Project of the year In 2022, Dassault Sysytem

1 Apr 2022

3rd rank in sustainability

SKILLS

BLE\Wi-Fi\HTTP\CAN-2.0B\CAN-DF\j1939
Expert

ESP32 Module Series
Expert

Protocols I2C\UART\SPI
Expert

Python AI & ML
Intermediate

PCB design
Intermediate

STMicrocontroller
Intermediate

FreeRTOS
Intermediate

C++
Expert

Robotics And IOT
Expert

Solidworks
Expert

PERSONAL SKILLS

- Possesses great analytical and problem-solving skills. Ability to think rationally and thoughtfully.
- Good at observing subtle details and can take decisions effectively.
- Outside the box thinker, can come up with creative solutions that can be a real asset in any role.
- A team player, good at working collaboratively with people in order to achieve a common goal.

LANGUAGES

English
Intermediate

Hindi
Advanced

Marathi
Advanced

HOBBIES

Traveling

Cricket

Declaration:
I hereby confirm that all the details furnished above are authentic and accurate to the best of my belief.