

SATYAM YADAV

+91 7518697585 • satyadav1213@gmail.com • linkedin.com/in/satyamyadav • github.com/SatyamY10008

PROFESSIONAL SUMMARY

Embedded Systems Engineer with 2+ years of experience designing and programming real-time robotic systems. Proven hands-on expertise in microcontroller programming (Arduino, ESP32, STM32), sensor integration, PCB design, and firmware development in Embedded C/C++. Built IoT-enabled humanoid robots and educational robotics kits using UART, SPI, and I2C communication. Skilled in RTOS, ROS, and modeling in MATLAB. Equipped with deploying robotic systems with real-time control, signal processing, and automation capabilities.

EDUCATION

B.Tech – Electronics and Communication Engineering (AI & Cybernetics)

Vellore Institute of Technology, Bhopal | 2022-2026 | CGPA: 8.04/10

- **Key Courses:** Embedded Systems, IoT, Robotics, Signal Processing, Control Systems, Microcontroller Programming, VLSI Design

WORK EXPERIENCE

Embedded Systems Intern – Robotics & IoT Division

Oct'2024 to Dec'2024

Hyaku Innovative Technologies Pvt. Ltd. | Internship | Remote

- Implemented an IoT-enabled water quality monitoring system utilizing Arduino/ESP32, achieving a 20% reduction in data latency by employing SPI sensors and UART communication protocols for faster environmental analysis.
- Developed firmware in Embedded C supporting UART & I2C communication. Reduced hardware issues by 20% by optimizing signal layout in KiCAD PCBs.

Embedded Developer Intern – Smart Prototyping Team

Sept'2023 to Nov'2023

Dr. Ambedkar Lab Foundation (NGO) | Internship | Remote

- Integrated temperature, motion, and proximity sensors using SPI and I2C protocols.
- Applied MATLAB to model and validate robotic arm movement and optimize control logic.
- Built and tested IoT-connected robots for rural STEM education.

PROJECTS

Aqua Check – Real-Time IoT Water Monitoring System

July'2024 to Mar'2025

- Developed a system using Arduino + ESP32 to monitor water quality (pH, turbidity, temperature). Enabled real-time sensor feedback on IoT dashboard. Used SPI sensors and UART comms to reduce data latency by 20%.

Autonomous Agriculture Bot with OpenCV Disease Detection

Mar'2024 to May'2024

- Engineered an IoT-based robot automating 3+ key farming tasks: sowing, irrigation, and weed removal. Integrate OpenCV for disease detection, improving early identification by 60% and increasing crop yield by 25%.
- Field-tested across 2 farm plots, collecting over 300+ plant images for validation and refinement.

Arduino-Based Humanoid Robot

Sept'2023 to Nov'2023

- Built robotic system to mimic human gestures using servo-motor synchronization. Programmed gesture recognition logic and control loop using RTOS simulation.
- Controlled robotic actions via ROS nodes and implemented path planning. Improved response speed by 15% through optimized firmware timing routines.

TECHNICAL SKILLS AND CERTIFICATIONS

Technical Skills:

- Languages: Embedded C, C++, Python
- Microcontrollers: Arduino, ESP32, STM32
- Protocols: UART, SPI, I2C
- Tools & Platforms: MATLAB, ROS, LTSpice, KiCAD
- OS & Frameworks: Linux, Robot Operating System
- Domains: Embedded Systems, Real-Time Robotics, IoT

Certifications:

- MATLAB & Simulink On-Ramp – MathWorks
- AWS Cloud Practitioner – Ethnus
- GenAI - IBM WATSONX
- Introduction to Self-Driving Cars – Coursera
- ROS for Beginners – Udemy
- VLSI Design - MavenSilicon

ACHIEVEMENTS

- Engineered robotic kits deployed in 3+ schools, improving engagement by 40%.
- Managed a team of 10+ for Electro VLSI, achieving 95% attendee satisfaction.
- Published documentation and PCB schematics for 2 robotic kits used in curriculum.