SHIVARAMAN T

Salem, Tamil Nadu, India
intelshivaram005@gmail.com | +91-90426-56366 | linkedin.com/in/shivaramant | github.com/SHIVARAMAN15

Profile Summary

B.Tech ECE (AI & Cybernetics) student specializing in Electrical, Electronics, and Real-Time Embedded Control Systems. Strong foundation in digital electronics, control system design, CMOS fundamentals, microcontrollers, SoC architecture, and RTL concepts. Hands-on experience in embedded firmware development, control algorithm implementation, hardware–software integration, subsystem verification, and system-level testing.

Education

Vellore Institute of Technology Sept 2023 – May 2027
B.Tech in Electronics and Communication Engineering (AI & Cybernetics)
CGPA: 8.66 / 10

Technical Skills

Programming: C++, Embedded C, Python
Embedded & Control Systems: ESP32, Arduino, ADC/DAC Interfaces, PWM Motor Control, Interrupt Handling, Sensor Integration, Real-Time Task Scheduling, Firmware Development, Hardware Debugging, System Verification & Validation (V&V)
Core Electronics & Control: Digital Electronics, CMOS Basics, Signals & Systems, Control System Modeling, Electric Drives Fundamentals, SoC Architecture, RTL Design Concepts
Modeling & Simulation Tools: MATLAB, Simulink
Other Tools: Proteus, LTspice, Git

Experience

Aqualis Inspection Services, Dubai — Engineering Intern May 2025 – Jun 2025

- Performed verification and validation (V&V) of 5+ embedded monitoring units involving real-time sensor data acquisition and signal processing.
- Executed functional testing, subsystem interface validation, root cause analysis, and technical documentation to improve reliability and compliance.

Projects

Smart Aeroponics System — Real-Time Embedded Control Platform GitHub

- Designed and deployed an ESP32-based real-time monitoring and feedback control system regulating four environmental parameters.
- Integrated multi-sensor ADC acquisition modules and implemented closed-loop control algorithms for automated actuation.
- Optimized control timing logic, improving dosing cycle efficiency and response stability.
- Conducted system integration testing, actuator validation, and safety mechanism implementation.

Automatic Aerator System (AquaDox) GitHub

- Engineered a dissolved oxygen monitoring and control system using threshold-based feedback mechanisms.
- Developed ADC data acquisition pipeline with embedded scheduling for real-time operation.
- Performed calibration, signal conditioning, and long-duration performance validation.
- Applied hardware–firmware co-design aligned with embedded system architecture principles.

Smart Patrol Bot — Autonomous Embedded Robotic System GitHub

- Designed and integrated an autonomous robotic platform using ESP32-CAM and sensor subsystems.
- Implemented PWM-based motor drive control through L298N H-Bridge with timing optimization.
- Executed real-time performance testing, subsystem integration, and fault diagnostics under varying load conditions.
- Improved operational stability through structured hardware debugging and validation.

Publications

Smart Helmet Systems: IoT Enhanced Safety and Integrated Display for Two Wheelers
6th International Conference on Recent Advancements in Mechanical Engineering (ICRAME 2025), NIT Silchar

Achievements

- Global Rank 5135 — TCS CodeVita Season 13
- Top 100 — Zealestra X AWS Machine Learning Challenge
- Selected Participant — Bharatiya Antariksh Hackathon 2024 (ISRO)

Certifications

Arduino Programming & Embedded Systems (GUVI - HCL) • MATLAB (Signal Processing) • Embedded Systems (Raspberry Pi & Arduino)