AYUSH SHARMA

Pune, India

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SKILLS

- **Programming Languages:** Embedded C, C++, Python, Verilog, Assembly
- **Embedded Systems:** Microcontrollers (ARM, AVR, PIC), RTOS, FreeRTOS
- **Communication Protocols:** I2C, SPI, UART, CAN, GPIO, TCP/IP
- **Hardware Development:** PCB Design, Circuit Debugging, Power Electronics
- **Debugging & Testing Tools:** JTAG, GDB, OpenOCD, Oscilloscope, Logic Analyzer
- **Soft Skills:** Problem Solving, Teamwork, Time Management, Leadership

EDUCATION

Massachusetts Institute of Technology (MIT)

Bachelor of Technology in Embedded Systems Engineering (2020 – 2024)

CGPA: **8.9/10**

XYZ Higher Secondary School

Intermediate in Science (PCM) (2018 – 2020)

Percentage: **92.3%**

ABC Secondary School

SSC (2017 – 2018)

Percentage: **96.2%**

EXPERIENCE

Embedded Systems Engineer

MicroTech Solutions Ltd. | Hyderabad, Telangana | **July 2022 – January 2024**

- Developed and optimized firmware for ARM Cortex-M based microcontrollers.
- Designed and implemented CAN and I2C-based communication protocols for industrial automation.
- Developed an embedded Linux-based IoT device for remote monitoring and control.
- Performed debugging using JTAG debuggers and analyzed performance bottlenecks.
- Designed a low-power embedded system for battery-operated applications, reducing power consumption by 35%.

Intern – Embedded Software Developer

InnovateTech Pvt Ltd. | Bengaluru, Karnataka | **May 2021 – June 2022**

- Assisted in the development of real-time firmware for automotive ECU modules.
- Worked on FreeRTOS-based task scheduling and multi-threading for embedded applications.
- Designed PCB layouts and worked on circuit simulation for IoT devices.
- Implemented UART communication protocol in embedded systems for wireless sensor networks.

PROJECTS

Smart Home Automation System | C++, Embedded C, ARM Cortex-M

- Designed an IoT-based smart home system for remote appliance control via mobile applications.
- Integrated MQTT and HTTP protocols for real-time data communication.
- Implemented energy monitoring functionality to optimize power usage.

Autonomous Robot for Line Following and Obstacle Avoidance | Embedded C, AVR, FreeRTOS

- Developed an autonomous robot using PID control for line tracking.
- Integrated ultrasonic sensors for real-time obstacle detection and avoidance.
- Optimized embedded code to enhance response time by 40%.

Industrial Motor Control System | STM32, CAN Protocol, PCB Design

- Developed an embedded system to control industrial motors with real-time feedback.
- Designed a high-efficiency PWM-based motor driver.
- Implemented CAN communication for multi-motor synchronization.

Real-Time Health Monitoring Wearable | ARM, Bluetooth, Embedded Linux

- Developed a wearable device to monitor heart rate, oxygen levels, and temperature.
- Implemented BLE communication for real-time health tracking via a mobile app.
- Designed a low-power firmware to extend battery life by 50%.

ACHIEVEMENTS / EXTRACURRICULAR ACTIVITIES

- Published a research paper on **"Optimizing RTOS for Embedded Systems"** at IEEE Embedded Systems Conference.
- Won **National Embedded Systems Hackathon 2023** for designing an IoT-based smart agriculture system.
- Hosted an embedded technology workshop for over 200 students at **TechFest 2023**.
- Active contributor to open-source projects related to **embedded firmware development**.

CERTIFICATIONS

- **Advanced Embedded Systems Design** – Coursera (Affiliated with Texas Instruments)
- **Embedded Linux Development** – Udemy

- **IoT and Smart Systems** – NPTEL

Let me know if you want any further modifications! 🚀