PAVITHRAN U B

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**CAREER OBJECTIVE**   
Enthusiastic Embedded Firmware Developer with a solid background in Applied Electronics. Passionate about designing and optimizing embedded systems and seeking an entry-level role to apply technical expertise, problem-solving abilities, and hands-on experience in firmware development. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**EXPERIENCE**

* + - * Configure and manage **network monitoring and performance analysis** using SolarWinds to ensure **99% uptime** and optimize performance and security.
      * Developed and installed a water level controller product using **PIC** and **Nuvoton microcontrollers**, ensuring efficient water management.
      * Designed, debugged, and optimized **PCBs using KiCad**, and worked with Keil and **MPLAB X IDE** for firmware development and hardware debugging.
      * Delivered technical training on **robotics, embedded systems, IoT, PCB design**, and hardware **debugging**, specializing in advanced controllers such as **STM32**.
      * **Internship experience** **e-Royce Motors India Pvt Ltd** – Trainee (15 days) Gained valuable hands-on experience, contributing to practical learning and skill development in a professional setting.
      * **Low-Level Firmware & System Programming:** Expertise in Bare Metal Programming, Fault Handling, Task Scheduling, Makefile Creation, Interrupt Priority Management, and Memory Mapping.

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**SKILL & CERTIFICATIONS:**

Embedded Firmware Development using ARM Microcontrollers (Certified)| DBMS (NPTEL Certified) |

Embedded Firmware Development using PIC Microcontroller (Certified) | Embedded C | C | Python (Basics) | C++ (Beginner) | SQL | LLD | Pandas | NumPy | Matplotlib | HTML (Basics) | CSS (Basics) | LaTeX (Basics) | LCD | ADC | DAC | RTC | 7-Segment Display | Sensors | Actuators | Timers | UART | I2C | SPI | GSM | USB | Digital Multimeter (DMM) | Oscilloscope | Function Generator | Soldering (TH & SMD) | Circuit Debugging | PCB Assembly | Proteus 8 | EasyEDA | PIC | ESP-32 | Arduino | MSP430 | CC3200 | Nuvoton | STM-32 | MP LAB X-IDE | Arduino IDE | CCS | Energia | Logosoft Comfort | KiCad | Keil IDE | ThingSpeak

**PROJECTS:**

* Designed and integrated FOTA on STM32 using ESP32 for wireless firmware retrieval and UART-based update.
* Developed a star topology-based embedded system for centralized data management with real-time web monitoring and control.
* Developed a fully automatic water level controller with dry-run protection using PIC/Nuvoton microcontrollers.
* IoT-based vehicle theft detection/notification and remote engine locking.
* Embedded-based integration of smart bed and smart toilet.
* Mini Project: Touchless Doorbell.
* IoT-based weather monitoring and forecasting system.
* Developed a mini servo-based mechanical robot with embedded control for motion demonstration and training purposes.

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**EDUCATION:**Master of Science in Electronics and Communication Systems (PSG Arts & Science, Coimbatore) 2019 -2022  
CGPA: 7.7