**Prasanth Kumar Padarthi**

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**Objective**

Results-driven **Embedded Engineer** with expertise in **Embedded Systems, RTOS, Firmware Development, and Linux System Programming**. Passionate about designing and optimizing real-time embedded applications for high-performance systems. Seeking a challenging role to contribute technical expertise and problem-solving skills to a cutting-edge tech team.

**Experience**

**Embedded Systems Trainee | Vector India *(Sep 2024 – Present)***

* Developed and debugged embedded software in **C, C++, and Embedded C** for **ARM7 & Cortex-M4**.
* Implementing **Linux system programming** and device driver development.
* Designed real-time applications on **STM32 and LPC21xx** microcontrollers.
* Hands-on experience with **UART, I2C, SPI, and CAN** protocols for embedded communication.

**Projects**

**RFID & Biometric Authentication for Exam Security *(Embedded C, Arduino, RFID, Biometric Modules)***

* Engineered a **dual-layer security system** integrating **RFID and biometric authentication** to prevent exam fraud.
* Developed real-time **firmware** for **RFID readers and fingerprint modules** ensuring 100% candidate verification.
* Designed **embedded C firmware** for seamless hardware-software integration and attendance logging.

**Smart Irrigation System using IoT *(Embedded C, STM32, Sensors, Cloud)***

* Designed an **IoT-based smart irrigation system** for precision farming.
* Implemented **sensor-driven automation** for real-time soil & weather monitoring, reducing resource wastage.
* Enabled **remote water management** via IoT connectivity, optimizing agricultural efficiency.

**Technical Skills**

* **Embedded Systems**: RTOS, Firmware Development, Device Drivers
* **Programming**: C, C++, Embedded C
* **Operating Systems**: Linux (Commands, Internals, Kernel, Device Drivers)
* **Networking**: Socket Programming, CAN Protocol
* **Microcontrollers**: **ARM7 TDMI, ARM Cortex-M4, STM32F4, LPC21xx,8051**
* **Communication Protocols**: UART, I2C, SPI, CAN,USB

**Certifications**

* **Advanced Embedded Systems Training** – Vector India
* **CISCO CCNA Certification** – Networking

**Education**

**B. Tech in Electronics & Communication Engineering *(2023)***

Sir C. R. Reddy College of Engineering, Andhra Pradesh | **CGPA: 6.55**

**Diploma in Electronics & Communication Engineering *(2020)***

Dr. B. R. Ambedkar G.M.R Polytechnic, Andhra Pradesh | **Percentage: 74.09%**

**SSC (10th Grade) *(2017)***

Z.P.H.S Penumuli, Andhra Pradesh | **CGPA: 8.8**

**Leadership & Extracurricular**

* **President, Student Council (2014-2017)** – Led student initiatives, academic events, and mentoring programs.