**Vishnupriya Kakuluri**

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### **SKILLS**

* **Embedded Systems:** ARM Cortex, AVR, PIC Microcontrollers, Raspberry Pi, ESP32, STM32
* **Programming:** C, C++, Embedded C, Python
* **Hardware Design:** PCB Designing (Altium, KiCad, Eagle), Circuit Simulation (Proteus, LTspice)
* **Communication Protocols:** UART, SPI, I2C, CAN, RS232, Modbus
* **Operating Systems:** Linux, FreeRTOS
* **Testing & Debugging:** JTAG, Oscilloscope, Logic Analyzer, Multimeter
* **Soft Skills:** Problem Solving, Teamwork, Leadership, Attention to Detail

### **EDUCATION**

**Indian Institute of Technology (IIT), Madras**

Bachelor of Technology in Electronics & Communication Engineering (2018 – 2022)

CGPA: 8.75

**ABC High School, Hyderabad**

Intermediate in Science (2016 – 2018)

Percentage: 90.2%

**XYZ School, Hyderabad**

SSC (2015 – 2016)

Percentage: 94.0%

### **EXPERIENCE**

#### **Embedded Hardware Engineer | TechSolutions Pvt. Ltd. | July 2022 – Present**

* Developed embedded firmware for IoT-based industrial automation applications.
* Designed and implemented STM32 and ESP32-based real-time control systems.
* Integrated UART, I2C, and SPI communication protocols for sensor data processing.
* Optimized power consumption and developed energy-efficient embedded systems.
* Designed PCB layouts and conducted hardware validation through simulation tools.

#### **Embedded Systems Intern | SmartTech Innovations | Jan 2021 – June 2022**

* Assisted in the development of IoT-enabled industrial monitoring systems.
* Programmed microcontrollers using Embedded C for automation projects.
* Debugged hardware issues using oscilloscopes and logic analyzers.
* Worked with the R&D team on prototyping and testing embedded devices.

### **PROJECTS**

#### **Industrial Motor Control System | STM32, FreeRTOS, CAN Bus**

* Developed an STM32-based motor control system for industrial automation.
* Implemented real-time motor speed control using FreeRTOS tasks.
* Used CAN Bus for communication between multiple control units.

#### **Smart Agricultural Monitoring System | Raspberry Pi, IoT, LoRa**

* Designed an IoT-based agricultural system for real-time monitoring of soil conditions.
* Used Raspberry Pi with LoRa communication to transmit sensor data to the cloud.
* Developed a dashboard for farmers to track environmental parameters remotely.

#### **Autonomous Delivery Robot | AVR, Machine Learning**

* Built a self-navigating delivery robot using AVR microcontrollers and ML algorithms.
* Integrated ultrasonic sensors for obstacle avoidance and navigation control.
* Implemented a computer vision-based object recognition system.

### **CERTIFICATIONS & ACHIEVEMENTS**

* Certified in Embedded Systems & IoT Development – NPTEL
* Completed Advanced PCB Design Course – Udemy
* Winner of National Embedded Systems Challenge
* Published research paper on Energy-Efficient Embedded Systems at IEEE Conference

### **EXTRACURRICULAR ACTIVITIES**

* Member of the Embedded Systems Club at IIT Madras
* Volunteer at STEM Outreach Program for School Students
* Finalist in National IoT & Automation Hackathon