Candidate Name	Praveen Arravelli
Total Experience	1 Year
Relevant Experience	1 Year
Current Location	Hyderabad
Preferred Location	Hyderabad
Bench Profile	On bench
Current Company	Embinsys
Current Client / Project	Dashpod (BLE enabled athlete performance analysis)
Primary Skill (Hands on Experience)	**Programming language**: C Programing. **Kernel programming**: Character driver development (UART), kernel config/compilation. **Linux system programming**: Process management, scheduling, memory management (MMU, paging),ipc. **Communication Protocols:** UART, SPI, I2C, WIFI. **Operating System**: Linux, FreeRTOS, OPENWRT. **Build Systems**: Yocto Project (Poky, Bitbake, meta-layers) **Embedded Platforms & Boards**:Nordic Semiconductor nRF52833, ESP32, STM32, Arduino,
Additional Skills	**Debugging**:JTAG Debugging, GNU Tools, putty, valgrind, whireshark.
Worked at QC before	NO
Education & Certification	B. Tech (Electronics and Communication)
Any additional Comments for candidate (Relevant exp within the industry)	NA

		Supplier Inputs		
Skills possessed by the candidate to perform the role efficiently	**Mandatory / Optional**	**Name of Projects in which the skills were used (add rows if necessary)**	**No: of months worked in each Project**	**Description of work done using the skills & Rating (0-5) (5 - High,0- - Low)**
Embedded C, Linux System Programming, Communication protocols (I2C, SPI, UART, I2S).	Mandatory	Dashpod (BLE Enabled Athletic Performance Analysis)	6 Months	4.5
C, Linux System Programming, Communication protocols (I2C, SPI, UART).	Mandatory	Smart wave	6 Months	4.5
Supplier Evaluation Comments	Skill set: C, Linux System Programming, Device drivers (make, cmake, compilation, configuration, module creation, blocking i/o, interrupt handlers, insmod, rmmod), UART Device Driver, Kernel debugging tools like printk, dmesg, KGDB, perf, KDUMP, RTOS, Python, I2C, UART, SPI, HTTP, MQTT,WLAN, Bluetooth Low Energy (BLE), , Wireshark, Arduino IDE, Segger Embedded studio, Visual studio Code, Linux GCC, Jlink , JTAG, Putty, ESP 32, Nrf52833,Raspberrypi.		

1. Each profile must be technically evaluated and must have the above sheet as a summary on top of each and every resumes
being submitted in Beeline
2. Profile without skills evaluation sheet will be rejected by the VMO
3. All the fields have to be filled completely by suppliers tech panel
4. Ratings have to be provided in the ratings box against each skills

Education:

Year	Degree	Major Subject	Institution	Full time/Part time
2024	B. Tech	Electronics and Communication	Christu Jyothi institute of Technology and Science	Full time
2020	Intermediate	Mathematics, Physics, Chemistry	TG Model college	Full time
2018	SSC	Mathematics, Science	ZPPHS	Full time

Professional Experience Summary

A Passionate and motivated Embedded Systems Engineer with one year of experience in building and improving embedded systems. Skilled in C and Data Structures, with hands-on experience in Linux system programming, microcontroller firmware development, and connecting hardware with software. Familiar with embedded Linux and different types of microcontrollers, with a strong focus on problem-solving and efficient system design.

Offering Area	Experience	Description
Embedded Software Engineer	1 Year	1 Year of experience in Embedded Software Engineer.

Technical Skills

Primary Skills	C, Linux System Programming, Communication Protocols, Networking Protocols and Kernel concepts, BLE, Wi-Fi.
Programming Languages	C, Embedded C, python.
Tools	Segger Embedded Studio, Putty, Code Composer Studio, NRF connect, JTAG, JLINK, ADB , Arduino, GDB, Visual Studio Code, ESP-IDF

Project 1	• **DASHPOD**
Role	• Developer
Responsibilities	• Developed and integrated firmware for the **LSM6DSR accelerometer sensor** with the **nRF52833** using Segger Embedded Studio. • Implemented **tap detection functionality** on the LSM6DSR to capture athlete activity in real-time. • Designed and tested **I2C communication protocols** between the LSM6DSR and nRF52833 to ensure reliable sensor data acquisition. • Optimized BLE data transmission to achieve **low-latency and power-efficient communication** with mobile apps . • Identified and resolved issues related to **data security**, ensuring that sensitive performance data was transmitted securely and did not leak to unauthorized servers.
Project 2	• **Smart wave**
Role	• Developer
Responsibilities	• Worked on the **MLX90640 thermal sensor** to detect heat emissions specifically from human bodies. • Developed logic to **filter out ambient and local environmental temperature noise**, isolating only human heat signatures for accurate zone detection. • Ensured smooth I2C communication between the thermal sensor and the ESP32-S3 controller. • Contributed to thermal data visualization on the **7-inch HMI display**, ensuring real-time updates and clear user interpretation.

Praveen Arravelli

Career Objective:

To be part of a progressive organization which gives me scope to enhance both my personal and professional skills and wherein my techno-rich abilities can be utilized for enhancing the goals of the organization **Professional Summary:**

- Embedded Software Engineer with **1 year of experience** in **C programming**, Linux system programming, and **Linux kernel development**.
- Proficient in **character driver development, kernel configuration, and compilation**, with hands-on experience.
- Experience in Embedded Linux systems development, including creating custom Linux builds using the **Yocto Project**, integrating device drivers, and performing low-level Linux system programming.
- Strong foundation in **process management, scheduling, memory management (MMU, paging), and IPC mechanisms (pipes, FIFOs, message queues, shared memory, semaphores)**.
- Knowledge of **RTOS** and experience in **multi-threading and synchronization using mutex locks**.
- Proficient in **communication protocols (UART, I2C, SPI, BLE, Wi-Fi)** and **networking protocols (TCP/IP, UDP, MQTT)**.
- Experienced in **JTAG-based debugging**, along with tools like Valgrind, Wireshark, GNU utilities, and Putty.
- Familiar with **Segger Embedded Studio**, **J-Link/JTAG**, and embedded platforms including **nRF52833, ESP32, STM32, and Arduino**,**Raspberry pi** .

Professional Work Experience:

- Working as an Embedded Software Engineer at Embinsys.

Technical Skills:

Programming Language	C
Data Structures	Linked lists, Stack.
System Programming	File management, signals, Threads, Process Management, Pipes, named pipes, Shared memory, Semaphore, Mutex.
Communication Protocols	UART, I2C, SPI
Operating System	Linux (Ubuntu), Windows.
Debugging Tools	GDB, ADB, GNU tools (gcc, g++, make, Valgrind), JTAG, JLINK
Wireless Communication	BLE, Wi-Fi
Version Control Tools	Git
IDE's and Compiler Worked on	Segger Embedded Studio, Visual Studio, Arduino IDE, GCC Compiler, Espressif IDE, STM32CubeIDE
Boards Worked on	nRF52833, Arduino, ESP32, STM32,Raspberry pi.

Project1:

Title: DASHPOD (Development of BLE Enabled Athletes Performance Systems)
Software: Segger Embedded Studio

Programming Language: C

Description:

We devised a Dashpod aimed at evaluating the performance and precision of athletes or fitness enthusiasts. This innovative device incorporates components such as the nRF52833 microcontroller, Addressable LEDs, Buzzer, Radar Sensor, Fuel guage, I/O expander, and Accelerometer. Programming for the nRF52833 circuit board was conducted using C language. Through the integration of radar sensors, accelerometers, and addressable LEDs, the Dashpod offers a comprehensive platform for performance assessment. Users can conveniently monitor their progress via a smartphone utilizing Bluetooth Low Energy (BLE) technology. This project not only deepened my understanding of BLE technology but also provided valuable insights into its practical application.

Responsibilites :

- Developed and integrated firmware for the **LSM6DSR accelerometer sensor** with the **nRF52833** using Segger Embedded Studio.
- Implemented **tap detection functionality** on the LSM6DSR to capture athlete activity in real-time.
- Designed and tested **I2C communication protocols** between the LSM6DSR and nRF52833 to ensure reliable sensor data acquisition.
- Optimized BLE data transmission to achieve **low-latency and power-efficient communication** with mobile apps and backend servers.
- Identified and resolved issues related to **data security**, ensuring that sensitive performance data was transmitted securely and did not leak to unauthorized servers.

Project2:
Title : SMART WAVE

Role : Developer

Software & Tools : Arduino IDE

Description:

The project focuses on automating air vent direction control in a car cabin to enhance passenger comfort and energy efficiency. The system utilizes a combination of visual and thermal imaging to detect the presence and position of occupants, dynamically adjusting airflow based on their heat zones.

- An **OV2640 RGB camera** captures live images of the cabin to detect driver and passenger presence visually.
- An **MLX90640 thermal camera** identifies the heat signature of body zones, allowing accurate occupant localization.
- **Servo motors** are used to automatically adjust the angles of air vents, directing airflow precisely to detected body zones.
- A **7-inch HMI touchscreen display** presents real-time data, including RGB and thermal imagery, vent positioning, temperature levels, and allows users to toggle between **Manual** and **Auto** control modes.
- The entire system is controlled by the **ESP32-S3 DevKit-C**, which handles sensor data processing, image analysis, decision logic, and user interface management.

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Responsibilities:

- Worked on the **MLX90640 thermal sensor** to detect heat emissions specifically from human bodies.
- Developed logic to **filter out ambient and local environmental temperature noise**, isolating only human heat signatures for accurate zone detection.
- Ensured smooth I2C communication between the thermal sensor and the ESP32-S3 controller.
- Contributed to thermal data visualization on the **7-inch HMI display**, ensuring real-time updates and clear user interpretation.

Education:

B-TECH | CHRISTU JYOTHI INSTITUTE TECHNOLOGY AND SCIENCE	2020-2024
ELECTRONICS AND COMMUNICATION ENGINEERING	6.85 CGPA

Declaration:

I hereby declare that the above-mentioned details are true to the best of my knowledge.

A Praveen