Candidate Name	Bharathi Gajjala
Total Experience	1.5 Years
Relevant Experience	1.5 Years
Current Location	Hyderabad
Preferred Location	Hyderabad, Bengaluru
Bench Profile	Yes
Current Company	Embinsys Pvt.Ltd
Current client/project	Dashpod (BLE enabled athlete performance analysis)
Primary Skill (Hands on Experience)	C Language, Linux system programming, Python , Android Architecture, Communication protocols (UART,SPI,I2C), BLE(Bluetooth Low energy). **Kernel device drivers:** Character Driver(UART driver), insmod, rmmod, dmesg, Interrupt handling. **OS:** Windows, Linux, Android **Boards worked on**: nrf52833, ESP32, MSP432E401y, Raspberry pi 4 Model B.
Additional Skills	Network protocols(TCP,UDP,MQTT), JTAG, JLINK, GDB, Valgrind, Docklight, ADB,dmesg, printk, putty, Wireshark, Git, Git hub.
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 bythecandidate to perform the role efficiently	**Mandatory / Optional**	**Name of Projects in which theskills were used (add rows if necessary)**	**No: ofmonths worked in each Project**	**Description of work done using the skills & Rating (0-5) (5 - High,0- - Low)**
• Embedded C, BLE, I2C, UART, Serial Bluetooth terminal, nrf connect app, nrf sniffer, wireshark	Mandatory	Dashpod	7 months	4.5
• C language, AT+MQTT, I2C, UART, AP mode , SP mode.	Mandatory	CGROF(Commercial Grade RO Filter)	6 months	4.5
• Raspberrypi4, USB to mini HDMI , shell script, gphoto2, Amazon web services	Mandatory	Cannon DSLR camera	3 months	4.5
Supplier Evaluation Comments	**Skill set**: C, Linux system programming, kernel device drivers(make, cmake,compilation, configuration, module creation, blocking i/o, interrupt handling, insmod, rmmod), Interrupt handling, Python, Bluetooth Low Energy, Communication protocols(UART,I2C,SPI), Networking protocols (TCP,UDP,MQTT), Character Driver (UART Driver), Make, CMAKE, git, Github. **Debugging tools:** ADB, GDB, JTAG, JLINK, Valgrind. **IDE & Tools :** SEGGER Embedded studio, Arduino IDE, Thonny, Visual studio code, Code Composer Studio,Putty.			

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	JNTUA	Full time
2020	Inter	MPC	Narayana Junior College	Full time
2018	SSC		Vikas High School	Full time

Professional Experience Summary
Dedicated Embedded Software Engineer with 1.5 years of experience at Embinsys in embedded systems designing with proficiency in C and strong background in Linux system programming. Adept at real-time debugging, sensor integration, and system-level programming. Passionate about building innovative embedded solutions and contributing to impactful projects.

Offering Area	Experience	Description
Embedded Software Engineer	1.5 Years	1.5 years of experience in Embedded Software Engineer

Technical Skills:

Primary Skills	• C , Linux system programming, Kernel device drivers(make, cmake,compilation, configuration, module creation, blocking i/o, interrupt handling, insmod, rmmod), Interrupt handling, Python , Communication protocols (UART,SPI,I2C), BLE(Bluetooth Low energy).
Programming Languages	• C, Python, Linux system programming, kernel device drivers
Tools	• SEGGER Embedded Studio, Git, visual studio, putty, JLink, CCS(code compressor studio), ADB, Valgrind, wireshark.

Projects:

Project 1	• **Dashpod (BLE-Enabled Athlete performance analysis)**
Role	• Developer and Test Engineer
Tools	• SEGGER Embedded Studio, JLINK
Responsibilities	○ Worked on A111 and A121 Radar sensor for response on different ways and we validate each movement of the object detections. ○ Improved the performance of radar sensor. ○ Developed and tested the pod for locking mechanism like lock, unlock, verify. ○ Developed the sensor to find accurate distance and improving detection speed. ○ Tested the dashpod using DFU through air. ○ Verified transmission and reception of BLE packets, including advertising and data payloads, by performing packet-level analysis with Wireshark using nrf sniffer.
Project 2	• **Commercial Grade RO Filter**
Role	• Test Engineer

Responsibilities	○ Worked on testing LTE and GSM on BG95 Development Board and observed the response of every command in putty. ○ Worked on testing AP mode and Station mode. ○ Worked on testing of AT commands.
Project 3	• **Canon DSLR camera**
Role	• Developer and Tester
Responsibilities	○ Developed and implemented a script to read and retrieve images stored on an SD card. ○ Automated image collection and cloud storage by transferring images to an Amazon S3 bucket via Raspberry Pi 4. ○ Designed and configured a systemd service to ensure automatic execution of the image transfer process upon Raspberry Pi boot.

Bharathi Gajjala

Career Objective:

Dedicated Embedded Software Engineer with a passion for programming, testing, and problem solving. Eager to leverage my technical skills and experience to contribute to innovative projects and drive impactful results. Committed to continuous learning and excellence in developing reliable, high quality embedded systems and software solutions.

Professional Summary:

- Embedded Software Engineer with 1.5 Years of experience.
- Programming experience in C Language.
- Good at Python, Linux System Programming and kernel device drivers.
- Knowledge on Linux architecture and linux booting process.
- Good Knowledge on IPC Mechanisms: Pipes, FIFOs, Message Queues, Shared Memory and semaphores
- Working experience with BLE (Bluetooth Low Energy).
- Working Experience in testing of AT commands.
- Experience on debugging tool like GDB, ADB.
- Working experience on I2C, SPI, UART protocols.
- Tested BLE AT Commands using ESP32
- Worked and tested MQTT protocol.
- Working experience with JLINK, JTAG, GDB.
- Good Knowledge on kernel Compilation and Building.
- Good Knowledge on threads for data parallelism using mutex locks.
- Good knowledge on process management, memory management and interrupt handling, Interrupt service routine(ISR).
- Knowledge of cross-compilation and kernel build systems (Kconfig, Makefile, menuconfig).
- Experienced in loading and managing kernel modules using insmod, rmmod, and dmesg for real-time kernel log analysis.
- Good Knowledge on Android Architecture and ADB commands.
- Good Knowledge of ARM Architecture.
- Good knowledge on LTE.
- Good Knowledge on Networking protocols: TCP/IP, UDP, MQTT

Professional Work Experience:

Working as an Embedded Software Engineer at Embinsys since 2024.

Technical Skills:

Programming Language	C, Python, Linux System Programming, Kernel device drivers.
Communication Protocols	UART, I2C, SPI
Operating System	Linux (Ubuntu), Windows, Android.
Networking Protocols	MQTT, TCP/IP, UDP
Debugging Tools	GDB, JLINK, JTAG, ADB, Valgrind.
Tools	PUTTY, RTT viewer, Docklight, nrf sniffer, wireshark
Version Control Tools	Git, GitHub.
Wireless Communication	BLE (Bluetooth Low energy).
IDE's and Compiler Worked on	SEGGER Embedded Studio, Code Composer Studio, Visual Studio, Arduino IDE,GCC Compiler.
Boards Worked on	ESP32, nrf52833, MSP432E401Y, Raspberry pi 4 Model B.
Kernel Device Drivers	MAKE, CMAKE, kernel configuration, kernel compilation, kernel debugging, Module creation, Character Device driver and interrupt management, Blocking i/o mechanisms, wait queue and wait event, poll and select, Asynchronous I/O mechanism, Device drivers(UART).

Project 1:

Title: DASHPOD (Development of BLE Enabled Athletes Performance Systems) (Blazepod, India)

Software & Tools: SEGGER Embedded Studio, nrf SDK,JLINK.

Programming Language: Embedded C

Role: Developer and Test Engineer

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 applications.

Responsibilities:

- Worked on A111 and A121 Radar sensor for response on different ways and we validate the each movement of the object detections.
- Improved the performance of radar sensor.
- Developed the sensor to find accurate distance and improving detection speed.
- Developed and tested the pod for locking mechanism like lock, unlock, verify.
- Verified transmission and reception of BLE packets, including advertising and data payloads, by performing packet-level analysis with Wireshark using nrf sniffer.
- Tested the dashpod using DFU through air.

Project 2:

Title: COMMERCIAL GRADE RO FILTER

ROLE: Testing Engineer

Software & Tools: Code Composer Studio, Arduino, Putty Project

Description:

Worked on a project for continuous monitoring of an RO water plant, focusing on key parameters like TDS levels, water flow rates, and water temperatures at the inlet, outlet, and waste stages. Collected data was transmitted to a server using the MQTT protocol. The system was powered by the MSP432E401YT microcontroller from Texas Instruments as the main control unit. For data transmission, the project used the Quectel BG95 module for LTE connectivity and the RTL8720DN (BW16) module for Wi-Fi. Data was reliably published to the server for further analysis and management.

Responsibilities:

- This project focuses on continuously reviewing and understanding the requirements, such as monitoring TDS levels, inlet/outlet water flow, water wastage, and temperature.
- Validated the accuracy and responsiveness of TDS, water flow, wastage, and temperature monitoring.
- Conducted unit testing for AP Mode and STA (Station) Mode, and verified data transfer via the MQTT protocol over Wi-Fi in STA Mode
- Collected data is transmitted over LTE module using AT commands.
- Doing the unit test for publishing Dummy data for 24 hrs.

Project 3:

Canon DSLR Camera

Role: Developer and Test Engineer**.**

Software & Tools: raspberrypi4 software, USB to mini HDMI, Amazon Web Services, gphoto2 tool**.**

Language: Python, shell script, systemd service.

Description:

This project focuses on developing an automated system to capture and store images from a camera's internal storage and upload them to an Amazon S3 bucket using a Raspberry Pi 4. The solution ensures seamless data transfer by leveraging a combination of embedded Linux automation, cloud storage integration, and systemd service management.

Responsibilities:

- Developed and implemented a script to read and retrieve images stored on an SD card.
- Automated image collection and cloud storage by transferring images to an Amazon S3 bucket via Raspberry Pi 4.
- Designed and configured a systemd service to ensure automatic execution of the image transfer process upon Raspberry Pi boot.
- Conducted extensive testing of the service across multiple camera models from different manufacturers to ensure compatibility and reliability.

Education:

B-TECH | Annamacharya institute of technology and sciences (JNTUA), kadapa 2020-2024
ELECTRONICS AND COMMUNICATION ENGINEERING 8.3 CGPA

Declaration:

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

Gajjala Bharathi