

## CH. SHRAVANI

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### **Summary:**

A total 6+ years of IT experience, dedicated Embedded Software Engineer with 3+ years of hands-on experience, specializing in Embedded systems, Hardware-software integration, and Firmware development.

Proficient in C programming, Linux system programming. Adept at tackling complex problems and delivering high-quality solutions, with a focus on continuous learning and innovation.

- Experience with STM32 and ARM cortex.
  - Good Knowledge of Embedded Linux C Applications & Libraries Implementations.
  - Proficient in reading datasheets and working with GDB and Strace
  - Experience with GCC Cross Compiler, Vim Editor, and Git version control
  - Familiar with communication protocols: UART, I2C, SPI
  - Experience using ST-Link V2 debugger
  - Comfortable working with Keil IDE, STM32CubeMX, and Docklight.
  - Good knowledge on Threads, process Management, Memory Management.
  - Good at IPC's i.e. FIFO, Shared Memory, Pipes. Knowledge on Semaphore, Mutex Locking mechanisms (spin-locks).
  - Knowledge on Multithreading concept and real time implementation aswell.
  - Requirement gathering and feasibility analysis.
  - Knowledge transfer to new team members.
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### **Educational Qualification:**

- **Bachelor of Technology & Sciences in Electronics and communication Engineering**, Sri Indu College of Engineering and Technology, JNTU-Hyderabad, 2018.
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### **Key Skills:**

- Embedded Software Development, C Programming
- Linux Kernel Compilation and Customization
- Firmware Development, Device Drivers, Hardware Integration and Testing
- STM32 Microcontroller ARM cortex M4 microprocessor
- Debugging Tools: GDB, Strace.
- GCC Cross Compiler.
- Good problem-solving capabilities.
- Microcontroller:STM32, Microprocessor:ARM cortex M4.

## **Work Experience:**

**Project #1 : GATE MONITORING SYSTEM**  
**Organization :** Vision Tech Engineering Pvt. Ltd. (June 2024 to till date).  
**Environment :** Embedded C, Keil IDE, Docklight, Git hub and STM32 Microcontroller.

### **Description:**

This project involves developing a smart gate monitoring system using the STM32F401RBT6 microcontroller. It includes hardware analysis, firmware development, and sensor integration to detect the gate's status (open/close) using IR beam and reed sensors. The JQ6500 16P audio module provides real-time audio feedback for different gate conditions. The system is tested and debugged to ensure seamless hardware and firmware integration for reliable operation.

### **Roles & Responsibilities:**

- Implemented real-time decision-making logic to detect anomalies or intrusions and respond with predefined alerts.
- Developed the scenarios and code based on RTC timings and sensor flags
- Debugged hardware-firmware interactions to resolve signal noise, sensor inaccuracies, or timing mismatches.
- Conducted unit and system-level testing to verify sensor responsiveness, audio playback timing, and overall system behavior.
- Led testing and validation of Audio module.
- Documented the system design, wiring diagram, and firmware logic for maintenance and deployment.

**Project #2 : WEATHER MONITORING SYSTEM**  
**Organization :** Cognizant Technology & Services (March- 2022 to May-2024).  
**Environment :** Embedded C, Keil IDE, Git hub, Tera term and STM32 Microcontroller.

### **Description:**

Collected the LM35 sensor and RTC time stamp readings by interfacing them to STM32 microprocessor using ADC and I2C modules. The temperature readings are sent to Client cloud for every 5 seconds using Wi-Fi module ESP8266 by interfacing it with UART protocol. The Wi-Fi connectivity is checked for every 1 second delay and displays ERROR (red LED) or OK (green LED) message along with temperature and time stamp readings. In case of ERROR, temperature and timestamp stored in EEPROM.

### **Roles & Responsibilities:**

- Interfaced the LM35 temperature sensor using the ADC module on the STM32 microcontroller.
- Integrated the RTC module via I2C for precise timestamp acquisition.
- Established UART communication with the ESP8266 Wi-Fi module to transmit sensor data to the Kernel Masters cloud every 5 seconds.
- Implemented a Wi-Fi connectivity checker that runs every 1 second, triggering appropriate visual feedback through:
  - Green LED for successful cloud communication.
  - Red LED in case of transmission failure.
- Developed logic to store temperature and timestamp data in EEPROM when cloud connectivity fails.
- Developed Interface ESP8266 Wi-Fi module with STM32 using UART  
Developed routines to check Wi-Fi connectivity every 1 second.
- Designed comprehensive test cases to validate end to end peripheral functionality.

**Project 3 : Warner Bros**

**Organization : Cognizant Technology & Services (April-2019 to Feb-2022)**

**Environment : SSRS (SQL Server Reporting Service)**

### **Description:**

As part of the Production Support team, I was involved in maintaining and ensuring the stability of enterprise-level applications and infrastructure. This role provided significant exposure to the IT operations landscape, with a focus on supporting real-time database servers, reporting systems, and managing day-to-day incidents and service requests through ServiceNow. The position enabled a deep understanding of the Software Development Life Cycle (SDLC), particularly the post-deployment and maintenance phases critical to business continuity in a production environment.

### **Roles & Responsibilities:**

- Monitored and supported production applications and servers to ensure high availability and performance.
- Gained hands-on experience with real-time database servers and reporting servers, including issue diagnosis and performance tuning.

## **Academic Projects:**

**Project#1 : BSNL (Bharat Sanchar Nigam Limited)**

**Title : Migration of corporate sector from IPv4 to IPv6**

### **Description:**

As the demand for the private networks by the corporate sector is increasing day by day the traditional IPv4 method of address allocation fails and there comes IPv6 to provide a greater number of addresses for the next coming generations. The main objective of this project is to migrate the network from IPv4 to IPv6 using the method of tunneling.

## **Industrial oriented mini project:**

**Project#2 : BHEL (Bharath Heavy Electricals Limited)**

**Title : Programmable logic circuit with computer Numeric control machine**

### **Description:**

This project is all about how we make circuits automated by writing code in computer-based machines, here the program is written in CNC machine dumped to control unit of plc. This project's main aim is to automize logical circuits in large industries.

### **Declaration:**

I hereby declare that the above information is true to the best of my knowledge.

**Signature**

**Date:**