

## CH. SHRAVANI

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### **Objective:**

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.

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### **Professional Summary:**

- 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).
  - 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.

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## **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 Kernel Masters 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:**