

R SRIRAM PRANAV

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Career Objective:

To leverage my 5 years of diverse experience, including 4 years as an Embedded Engineer, in designing and developing innovative embedded systems. Passionate about utilizing my skills in communication protocols, debugging, and system optimization to contribute to cutting-edge technologies, while achieving organizational goals and fostering personal and professional growth.

Career Summary:

- Hands-on experience in **communication protocols** such as SPI, I2C, and UART.
- Proficient in **Embedded C, Linux, and ARM-based development**, with expertise in **ST-LINK/JTAG debugging**.
- Skilled in **PHP programming** and **database management**.
- Strong **team player** with excellent communication and interpersonal skills, a quick learning ability, and a dedication to delivering high-quality results.
- Adaptable to diverse work environments, whether in small startups or large organizations.

Academic Qualification

- **Bachelor of Technology (ECE)** from **Lords Institute of Engineering and Technology**, affiliated with JNTUH.

Technical Skills:

- **Programming & Platforms:** Embedded C, Linux.
- **Hardware Expertise:** STM32 Microcontrollers, AM5728 Processors.
- **Communication Protocols:** SPI, I2C, UART.

Tools & Software:

- **Development Tools:** STM32 Cube IDE, STM32 Cube MX, STM32 Cube Programmer, KEIL, CCS (Code Composer Studio).
- **Debugger Tools:** ST-LINK-V2, JTAG.
- **Version Control:** GIT, SVN.

Professional Experience:

Organization: Peoplelink Unified Communications Pvt Ltd.

Role: Microcontroller Specialist.

Duration: Feb 2025 – Present.

Organization: Stuam Technologies Pvt Ltd.

Role: Embedded Engineer.

Duration: Aug 2021 – 17th January 2025.

Projects:

1. Digital Mobile Radio (DMR).

Client: ITI LTD, Bangalore.

Team Size: 07 Members.

Digital Mobile Radio (DMR), Model LCR of ICS, is an open Digital Mobile Radio standard defined in the European Telecommunications Standards Institute (ETSI) Standard TS 102 361 parts 1–4 and used in public safety and commercial solutions around the world. DMR, uses proprietary AMBE+2 vocoder and two-slot TDMA in a 12.5 kHz channel. It offers both voice and data communications and interfacing to external networks. Voice communications offer features as call alert, emergency call, remote monitoring, silent worker, Push-to-Talk ID, radio check, all call, stunning etc. It also offers Greater call capacity, more reliability, Security features, better call quality, Privacy features, longer battery life, increased spectrum efficiency. DMR are offered in VHF and UHF bands meet MIL-STD-810F/G spec.

Roles & Responsibilities:

- Performed board bring-up activities for the STM32 microcontroller, ensuring seamless hardware-software integration and successful initialization of peripherals such as SPI, I2C, and UART.
- Configured the CMX7341 chipset on the STM32 microcontroller to establish FM and DMR calls using the SPI protocol.
- Utilized the I2C protocol to interface with peripherals, including OLED displays and EEPROM, ensuring seamless communication and functionality.
- Developed and optimized the GPS module interface with UART, enabling real-time retrieval of IRNSS (L1 & L5 bands) satellite-based coordinates using NMEA protocols such as \$GNSS, \$GNGAA, \$GPRMC, and \$GPGSV.
- Developed and optimized a reliable display driver for Base-Station and Repeater systems, ensuring efficient performance and smooth user experience.
- Debugged and resolved complex application-level bugs, ensuring stability and reliability while tuning critical parameters to achieve optimal performance of the software.
- Designed state machines to efficiently manage functionalities such as Radio States, improving modularity, scalability, and overall system efficiency.
- Contributed to code optimization efforts by improving execution speed, reducing memory footprint, and enhancing system responsiveness.

2. Line Interface Detector Unit (LIDU)

Client: BEL, Ghaziabad.

Team Size: 04 Members.

Project Duration: 6 Months.

The Line Interface and Detector Unit (LIDU) is used to transmit data from Radar Side over existing JWD cable to the Detector Side located at a distance of 20 Kms. The Radar side is the Master and the detector side is the slave. The Master will be interfaced to 10 slaves simultaneously and will work independently.

Roles & Responsibilities:

- Designed and developed a high-performance application for data transfer on an STM32 microcontroller using the USART communication protocol, ensuring seamless integration with Ethernet and RS232 interfaces for reliable and efficient data exchange.

Organization: Innovation Communication Systems Pvt Ltd.

Role: Intern Embedded Engineer.

Duration: Jan 2021 – Aug 2021.

Projects:

1. High Capacity Radio Relay (HCRR)

The High-Capacity Radio Relay—IRR-B4(HCRR) is indigenously designed and developed by ICS. It operates in Band –IV (4400 MHz to 5000 MHz) capable of Full-Duplex Data transfer up to 100 Mbps.

High-Capacity Radio Relay—IRR-B4(HCRR) can be deployed for

- Point to Point (P2P) Communication link.
- Point to Multi Point (P2MP) Communication link.
- Repeater mode.

Contributions in the HCRR project:

Worked extensively on the AM5728 SITARA (TI Processor), focusing on:

- EOW (IP-Based Calling) feature integration.
- SNMP implementation for network management.
- Kernel and U-Boot compilations for system boot and initialization.
- SD card creation for bootable storage media.
- Bare-metal testing of TI processor boards using the CCS tool to ensure hardware-software compatibility and functionality.

2. Software Defined Radio (SDR)

Software Defined Radio—(SDR), is ICSs indigenously designed, developed and manufactured Software Defined Radio (SDR). It supports Digital waveforms OFDM, Single carrier wideband and DSSS. Radio supports legacy waveforms such as FM, AM, FSK, a single carrier narrow band waveform of 50 kHz bandwidth and CPM. SDR services include legacy Analog Voice, Digital Voice, Data Communication, Video capture and display. All the waveforms are developed and implemented on a reconfigurable HW. SDR is MANET ready. User defined encryptions can be loaded via a standard fill gun. TRANSEC is via FH at hop rate up to 800 hops per second. IVUR- A2A is airborne version Radio that works in the VHF, UHF and L band frequencies and is designed to operate in Air to Air, Ground to Air and Air to Ground modes. Keeping in view of the Doppler shifts associated with up to 3 Mach relative velocities, Doppler estimation and correction mechanisms exist to provide uninterrupted voice and data communication up to 4 Mbps.

Contributions in the SDR project:

Worked on the AM5728 SITARA (TI Processor), with responsibilities including:

- Kernel and U-Boot compilations to enable system functionality.
- SD card creation for system boot processes.
- Bare-metal testing of TI processor boards using the CCS tool, ensuring robust hardware validation.

Organization: NR TeleSystems Pvt. Ltd.

Role: Trainee Software Engineer

Duration: Jan 2019 – March 2020.

Team Size: 03 Members.

Client: INDIAN-RAILWAYS (SCR).

Contributions in Indian Railways (SCR) Projects:

1. Coach Management Information System (CMIS):

Developed web pages for the Coach Management Information System (CMIS), focusing on efficient coach management and real-time tracking functionality. Utilized PHP,HTML, CSS, and JavaScript to create user-friendly and dynamic interfaces.

Conducted thorough testing to verify the functionalities of modules, ensuring proper integration and bug resolution to ensure a smooth and efficient user experience.

2. Running Room Feedback System (RRFS):

Worked on the development of web pages for the Running Room Feedback System (RRFS), facilitating the collection and analysis of feedback for running-room operations. Applied PHP,HTML, CSS, and JavaScript to build intuitive and responsive user interfaces.

Conducted testing and debugging to ensure accurate feedback processing and smooth operation of the system across multiple devices and browsers.