

Isampalli Pallavi

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Profile Summary

Embedded Software Development Engineer with 3 years of experience in embedded C programming. Experienced with serial communication protocols like I2C, SPI, and UART. Skilled in Linux OS and Different 8/16/32 bit Micro-controller (STM32, ESP32).

Key Skills

- **Languages:** C, Embedded C.
- **Processors/MCU/SoC:** ESP32,ESP8266
- **Serial Protocols:** I2C, SPI, UART
- **Operating System:** Windows.
- **Development Tools:** StCube, Visual studio,ESP-IDF.
- **Debugging Tools:** Docklight.
- **Device Drivers:** CH340, CP2102.
- **Operating Systems:** Windows, Linux (Makefile creation, static & dynamic lib linking)

Professional Experience

Associate Software Engineer (Embedded Systems Developer)

SPANIDEA Systems Pvt Ltd

June 2024 - April 2025

- Developing and debugging embedded software for various projects
- Collaborating with cross-functional teams for system integration

Engineer – Embedded (Embedded Systems Developer)

PRESPI INTERACTIVE PVT LTD

March 2022 - May 2024

- Developed and maintained embedded systems software
- Implemented communication protocols and interfaced with hardware components

Academic Profile

- **B. Tech in Electrical & Electronics Engineering** .Kakatiya University College of Engineering and Technology , Warangal.
70.65% | 2017-2021

- **Intermediate (Maths, Physics & Chemistry)** Sri Nalanda Jr. College,Kothagudem
78.7% | 2015-2017
- **SSC Pragathi Vidyalayam,Bhadrachalam**
GPA: 8.8 | 2015

Projects Involved

Project:1

Title: OpenSync-Based Cloud-Managed Networking

Description:

Worked on integrating OpenSync for cloud-managed Wi-Fi and networking solutions. Focused on enabling remote device management, monitoring, and performance optimization for Access Points (APs) and Gateways.

Technologies:Linux, C, OpenSync, TCP/IP, Wi-Fi.

Key Achievements:

- Integrated OpenSync for real-time network monitoring and management.
- Improved Wi-Fi performance by optimizing device configurations.
- Debugged and fixed networking issues to enhance stability.
- Optimized data communication between devices and the cloud

Project-2:

Title: Capturing Network Packet Sniffers

Description :

Designed and implemented a network monitoring tool using raw sockets to capture and analyze TCP packets. The tool provided real-time insights into TCP communication, allowing for detailed analysis of connection establishment, data transfer, and error handling. Optimized packet filtering to ensure efficient capture of relevant TCP traffic.

Technologies: linux C, TCP/IP, Raw Sockets, Network Protocols.

Key Achievements:

- Developed custom filters to capture only TCP packets, improving analysis efficiency.
- Enhanced network diagnostics by identifying and troubleshooting TCP connection issues.
- Successfully optimized packet processing, reducing analysis time by 15%.

Project-3:

Title: Smart Home Lights Monitoring

Description:

Designed and implemented a smart light monitoring and control system using the ESP32 microcontroller. Integrated various interfaces such as UART, GPIOs, I2C, and Wi-Fi to enable seamless communication between sensors, relays, and control units. The system offered secure remote control via an Android smartphone application using TCP and MQTT protocols. Emphasis was placed on low power consumption, real-time light status monitoring, and reliable remote access for authorized users through local Wi-Fi.

Technologies: C, Embedded C, ESP-IDF, Arduino IDE, TCP, MQTT, UART, GPIOs, Wi-Fi, I2C

Key Achievements:

- Developed a flexible and cost-effective system architecture adaptable to various lighting environments
- Enabled secure remote access for real-time control using custom Android application
- Improved energy efficiency by implementing smart timing and condition-based light activation
- Integrated MQTT for lightweight and efficient data communication.

Project-4:

Title: Smart Lock-box

Description:

Developed a secure smart lock-box system powered by ESP32, integrating locking mechanisms and sensor feedback through UART and I2C interfaces. Designed to enhance physical security, the system optionally supports input through a keypad and can be programmed for access control logic. Built using embedded C, the firmware ensures real-time locking, unlocking, and user authentication functionalities, allowing for future integration with mobile applications or network-based control systems.

Technologies: C, Embedded C, ESP-IDF, Arduino IDE, UART, GPIOs, I2C, ESP32 Microcontroller

Key Achievements:

- Engineered a reliable and tamper-resistant smart locking mechanism using embedded C
- Incorporated sensor feedback to enhance system responsiveness and security
- Provided a scalable framework to integrate keypad, Bluetooth, or app-based access control
- Achieved stable performance with minimal latency in command-response cycle.

Strengths

- Quick learner
- Effective time management
- Self-confident and positive thinker
- Team player with strong work ethics
- Conceptual approach and logical thinking

I.PALLAVI