**Suresh Manepalli**

C/C++/Android Developer

Email: [suresh.manepalli.111@gmail.com](mailto:suresh.manepalli.111@gmail.com) Mobile: +919032652986 Portfolio: [sureshM470.github.io](http://sureshm470.github.io)

**EDUCATION**

**Nalla Narasimha Reddy Education Society’s Group of Institutions. Hyderabad, India**

**B.Tech** (Electronics and Communication Engineering) - **Distinction** **2015**

**TECHNICAL SKILLS**

* **Languages/Script:** EmbeddedC/C++, JAVA, Kotlin, Python, Shell Script, JavaScript
* **Programming Concepts:** RAII, Smart Pointers, SOLID Principles, Asynchronous Programming
* **Frameworks/Libraries:** Android SDK & NDK, STL(C++), Jetpack Compose, Robolectric
* **Android Development:** Jetpack Libraries, Room DB, Retrofit, Hilt(DI), WorkManager, Koin, Firebase, Junit, Robolectric, Mockito, Espresso UI testing.
* **Build Tools:** Gradle, CMake
* **Version Control:** Git
* **Database:** SQLite, MySQL
* **IDE:** Android Studio, Visual Studio Code, Intellij IDEA, PyCharm
* **Interfaces:** JNI, UART, SPI, I2C, I2S
* **Network/Communication Protocols:** TCP, UDP, HTTP, MQTT
* **Cloud Services**: Firebase (Authentication, FCM, Crashlytics, Remote Config, etc.)

**PROFESSIONAL SUMMARY**

* Total **8+ years** of experience in software development with expertise in **Android application development** and **C/C++ programming**.
* **3 years** of experience in **Embedded Systems** and **Home Automation**, working with **C/C++** for low-level hardware interaction.
* Experienced in designing, developing, unit testing, and maintaining robust **Android applications** using Android SDK, Jetpack components, Kotlin, and Java, with a strong focus on **modern architecture**, **responsive UI design**, and **adaptive layouts** that scale across various screen sizes and device types.
* Proficient in integrating native code into Android using **Android NDK**, **JNI**, and **CMake**, optimizing performance-critical modules.
* Experienced in **cross-compiling C/C++ code** for various target architectures using tools like **CMake**, **GCC**, and **Android NDK**, ensuring optimized builds across platforms.
* Strong understanding of Android architecture patterns (**MVVM, Clean Architecture**), REST APIs, Room DB, and background task management.
* Follows **recommended coding practices**, adheres to **SOLID principles**, and writes **clean, maintainable, and testable code**.
* Follows modern C++ practices including **RAII**, smart pointers, and deterministic resource management for robust and memory-safe applications.
* Familiar with performance tuning, crash analysis, memory profiling, and debugging across Java and native layers.
* Quick learner and team player with a passion for building reliable, scalable, and efficient software systems.

**WORK EXPERIENCE**

**SOFTWARE ENGINEER (Technical Lead Role)**

**Enfec Solutions Pvt Ltd (**Client **T-Mobile) Sep 2020 - Present**

* Serving as the Technical Lead for the Android team, overseeing architecture, code quality, and providing overall technical direction.
* Guide and mentor the team through **code reviews**, enforce **SOLID principles**, and promote clean, maintainable development practices.
* Oversee and maintain the **health of the project**, ensuring stable builds and preventing regressions.
* Designed and implemented Android App features using **Jetpack**, **MVVM architecture**, **Kotlin**.
* Integrated native **C++ code via JNI** to implement authentication logic involving hex-based calculations for ICC authentication and EAP-AKA workflows.

**Projects:**

* **VISUAL VOICEMAIL (T-Mobile)**

A telecom carrier android app that enables users to view, manage, and listen to voicemail messages directly through a visual interface. Implemented features like voicemail **audio playback**, **transcription** of voicemail messages, and **translation** support for multilingual users.

* **SECURITY MODULE (T-Mobile)**

A dedicated Android module designed to handle authentication workflows required for telecom services, including integration with the Visual Voicemail app.

**SOFTWARE ENGINEER**

**REPLETE HEALTH IT SERVICES PVT LTD (Hyderabad) Feb 2020 - Sep 2020  
Project: Replete Health (Android Application)**

A healthcare mobile application that allows users to track and manage their health status, access medical records, monitor behaviors, and book doctor appointments.

* Built the entire application from scratch as the **sole Android developer**, handling everything from architecture to feature development and UI design.
* Enabled users to monitor health parameters, access personal records, and receive medical support through appointment scheduling and doctor communication features.

**SOFTWARE ENGINEER  
TECH2020 Solutions (Hyderabad) Jul 2017 - Feb 2020**

**Projects:  
End-to-End Development of Home Automation Devices**Designed and built multiple Wi-Fi-based smart home devices using the **ESP8266** **chip** and module.

* Developed devices such as **Wi-Fi Switch, Dimmer, IR Remote, RGB Controller, PIR Sensor,** and a **Thermostat.**
* Owned the entire product lifecycle: from **circuit design in Altium**, to **PCB fabrication**, **firmware programming,** and final product validation.
* Implemented **Firmware Over-The-Air (OTA)** update support across all device types.
* Developed embedded code for **GUI control on the Wi-Fi Thermostat**, enabling users to manage temperature settings locally.

**Z-Wave Controller Software for Embedded System**Created a C/C++ software controller for **Z-Wave** devices, running on **ARM-based platforms** like Android TV boxes.

* Built native controller software to communicate with Z-Wave USB sticks via serial interface.
* Enabled remote control using **MQTT and HTTP** APIs, bridging communication between embedded systems and Android apps.

**Smart Home(Android App)**An Android application that controls both Wi-Fi and Z-Wave smart devices.

* Developed device pairing, status updates, and control logic using network communication protocols.
* Integrated MQTT/HTTP APIs to interact with the embedded firmware and Z-Wave controller.

**AOSP Customization for Android Boxes**Modified and built AOSP for client-specific branding and behavior.

* Customized boot logos, launcher apps, and system-level defaults for Android boxes.

### **Awards & Recognitions**

* **Won 1st Prize** in *Circuit Assembly* at **Navikarana 2K13**, a college-level technical fest.
* **Won 1st Prize** in *Electronic Model Exhibition* at **Navikarana 2K13** for the project **“Home Appliance Control using Infrared”**, which was also **featured in local newspapers**.
* Built an **FM Transmitter** by self-learning through online resources, successfully transmitting audio over a selected FM frequency; the project was **appreciated by college professors** for its initiative and execution.

**Personal Projects**

**Video Editor Engine  
C++ backend for timeline-based video editing**Built a C++ engine that enables timeline-based editing using FFmpeg as the core. Supports layered video/audio tracks, clip trimming, and overlay/mixing logic.  
**Tech:** C++, FFmpeg, Timeline

**FFMPEG Cross Compilation (CMake)  
CMake-based build system for portable FFmpeg**Created a general-purpose CMake setup to cross-compile FFmpeg for multiple platforms and architectures. **Tech:** CMake, FFmpeg, Cross Compilation, Android NDK

##### **Smart Wireless Water Level Controller Embedded system with wireless sensor and Android control** Developed a two-part water level automation system:

* Sensor node using ultrasonic sensor and NRF24L01 for wireless transmission.
* ESP8266-based controller with relays for motor automation based on received data.
* Remote control and monitoring through a custom Android app using HTTP communication.  
  **Tech:** ESP8266, NRF24L01, C++, Ultrasonic Sensor, HTTP, Android