Ritesh Sohlot Singh

Portfolio Link

Email : iamritesh.dev@gmail.com

Mobile : +91-97-1876-0209

WORK EXPERIENCE

- **EMI Shield**   Gurugram, India | Jan 2023 – Present

  Founded and architected EMI Shield, a **remote-locking SDK** enforcing EMI compliance across Android devices and empowering responsible lending across fragmented markets. Integrated Firebase Cloud Messaging (FCM) for secure, real-time user control. Achieved **wide Android compatibility** while registering **90K+ devices/month**. Partnered with **18+ merchants**, generating **10L+ monthly revenue** through a **freemium-to-looped subscription model**—offering 3 months free, followed by paid usage cycles.

  Co-Founder & Lead Android Developer   *Jan 2023 - Present*

  - **Multi-Modular Architecture**: Designed a highly scalable build system with **parallel Gradle configurations**, reducing build time by over **40%** and simplifying maintenance across modules

  - **Communication SDK**: Implemented reliable real-time messaging via persistent **FCM** channels, achieving over **90%+ delivery rate** for remote commands and device controls. Designed an **offline support system** using SMS fallback and server-side logic integrated with **DPM**, featuring **FRP enforcement** and hard reset protection for secure offline operations.

  - **Location SDK**: Enabled real-time tracking with battery-optimized home detection algorithms, powering over **90K+ active devices/month** across a **wide range of Android models**

  - **Auto-Deploy Plugin**: Created a custom Gradle plugin that automates APK build, upload, and deploy triggering **remote app install** in real-time reduced operational overhead and enabled faster rollout across **90K+ devices/month**

  - **REST SDK**: Built reusable networking layer using **coroutines**, **Flow**, and **MVI architecture** enabled seamless data flow across modules and accelerated development velocity

  - **Ktor Server Integration**: Implemented **Ktor** backend for secure, real-time communication between devices and merchant dashboards onboarded **18+ vendors**, resulting in **10L+ monthly recurring revenue**

- **Cashify**   Gurugram, India | May 2021 - Aug 2022

  Software Engineer 2 - Mobile

  - **Scratch Detection SDK**: Built an image analysis SDK to identify scratches at the screen and panel level on pre-owned devices using dual-phone coordination. Established a continuous **socket-based link** between a **primary user device** and the **target device** via QR code pairing. Custom camera workflows designed to capture high resolution, clutter-free images of device panels suitable for ML model training.

  - **Image Framing & Capture Optimization**: Implemented a camera framing system using **QR code position and pixel-to-size ratio** to estimate precise device distance. Applied focal length and perspective corrections to achieve accurate **bounding box detection** and optimal focus for screen cropping. Accelerated capture pipeline through **parallel processing** with Kotlin **coroutines** and **Flow**, delivering **75% reduction in latency** and high-fidelity panel images for downstream analysis.

  - **Performance & Size Optimization**: Reduced APK size by over **60%** through aggressive optimization techniques including **ProGuard** rules, stripping unused assets, eliminating redundant fonts and adopting lightweight formats like **WebP** for images. These enhancements, along with SDK modularization, contributed to faster build times **35-40%** and improved **CI/CD** pipeline efficiency.

  - **Socket Infrastructure**: Implemented a **scalable socket infrastructure** for low-latency **real-time communication** between multiple devices during the inspection workflow. Enabled asynchronous instruction passing, **device telemetry sync**, and image transfer, supporting concurrency with minimal overhead.

  Software Engineer 1 - Mobile

  - **Secure Wipe Algorithm**: Implemented a robust data erasure module for Android devices supporting configurable **1-pass, 2-pass, and 3-pass wipe strategies**. Ensured low recovery rates by combining sequential overwriting with randomized bit patterns for secure deletion. Optimized wipe duration through **parallel execution using thread pools and Kotlin coroutines**, achieving over **40% faster wipe throughput** across internal and external storage targets.

  - **Dynamic Translation SDK**: Built a localization system enabling **runtime language switching** and **remote translation** updates via **getString()** override. **Eliminated Play Store redeployments** for new locales, **improving release speed** and user experience.

  - **Device Quality Assessment SDK**: Built a modular suite for **remote diagnostics** of second-hand Android devices using native services. Enabled automated testing of **SIM**, **network**, **WiFi**, **speaker**, **mic**, and **display**, powering **dynamic pricing** through real-time telemetry.

- **99Roomz**   Gurugram, India | Mar 2019 - Mar 2021
  Android Developer
  - **99 Roomz App Revamp**: Migrated legacy architecture to scalable **MVVM** pattern using **LiveData**, improving modularity and simplifying future enhancements. Refactored key screens into a **server-driven UI** using the **Epoxy** framework, enabling **dynamic layout rendering** from backend configuration. Reduced manual app updates and improved adaptability to remote content.
  - **99 Trips Feature Integration**: Developed the **international travel booking module**, featuring itinerary listings, structured filters, and trip previews. Implemented a **short-form vertical media carousel** akin to **Instagram Reels**. This feature led to a **18% increase** in trip booking conversion rate through improved visual storytelling and user engagement.
  - **Live Streaming SDK**: Designed and deployed a reusable SDK for **live one-to-many video streaming** using **RTMP protocol** and **AWS MediaPackage**. Achieved improved reliability across varied devices with scalable infrastructure.
- **Corpzone**   Gurugram, India | Jan 2018 - Mar 2019
  Android Developer
  - **Instagram Repost Utility**: Developed an Android app to automate **Instagram feed reposts**, integrating clipboard-based link extraction and image pre-processing via **background threads**. Enabled post creation and sharing using **intent-based triggers**, streamlining user workflow.
  - **Tutorial App Revamp**: Redesigned educational UI components to improve clarity and readability. Optimized typography and layout structure to support long-form study sessions with better user focus and engagement.

Skills

Languages: Java, Kotlin, Dart, Javascript, SQL	**Libraries:** OkHttp, Retrofit, Compose, Dagger2, Room, jUnit
Technology: FCM, Firebase,	**Others:** Android Studio, REST API, Git, CICD, Jenkins, Docker

Projects

- **CodePlayground – Virtual Electronics Platform**: Built an interactive web-based **simulation platform** to teach coding concepts using block-based **Blockly** programming and virtual hardware components. Integrated modules such as **NeoPixels**, **Servo motors**, and LEDs, allowing users to control circuits and receive real-time feedback in a sandboxed live environment. Enabled component abstraction via controller interfaces and a modular block registry architecture for scalable extension. [Github link](#)

- **Custom USB Microcontroller for CodePlayground**: Engineered a custom USB-enabled microcontroller designed for seamless **plug-and-play** integration with the CodePlayground web platform. Supported sensor connectivity over USB to simplify hardware prototyping and **eliminate manual wiring** with jumper cables. Built firmware communication over NodeMCU and integrated driver logic to bridge hardware inputs with Blockly instructions. Designed and **3D printed** a tailored enclosure for usability and durability in classroom and maker environments. [Project Link](#)

- **Android Boilerplate Wizard**: Designed a modular boilerplate repository to accelerate Android app development by enabling selective feature integration via **branch-based architecture**. Developers could merge branches for Hilt, Retrofit, Room, Navigation, and Compose without rewriting boilerplate.[Github Link](#)

- **Feature-Rich News App Implementation**: Built a fully functional news app on top of Boilerplate Wizard showcasing advanced features such as **MVVM with Clean Architecture**, **offline-first caching**, **pagination with Paging 3**, and **search optimization using Flow operators** (debounce, filter, flatMapLatest). Integrated Jetpack Compose UI, WorkManager background sync, and multi-language support for global news delivery. [Github Link](#)

Education

- **Maharishi Dayanand University (MDU)**
  Bachelor of Computer Applications (BCA) |CGPA: 9.1/10   *2015 – 2018*