

Sk Masum Ali

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Summary

Android Engineer specializing in Kotlin, Jetpack Compose, and offline-first architecture. Experienced in background OS internals, packet routing via VpnService, hardware-backed crypto, and building production apps backed by 400+ automated test suites.

Education

JIS College of Engineering

2024 – 2028

Bachelor of Technology in Computer Science and Engineering

Technical Skills

- **Languages:** Kotlin, Java, C++, TypeScript, SQL, Shell
- **Android Ecosystem:** Jetpack Compose, Kotlin Multiplatform (KMP), Room, SQLDelight, Hilt, Coroutines, Flow, WorkManager, Glance API, VpnService, Media3/ExoPlayer
- **Architecture & Patterns:** MVI, MVVM, Clean Architecture, Multi-Module Gradle, Repository Pattern
- **Security & Storage:** SQLCipher (AES-256), Android Keystore, Biometric Prompt, PBKDF2, DataStore
- **Testing & Tooling:** JUnit, Mockito, GitHub Actions CI/CD, Android Studio Profiler, Git, Linux

Projects

Cipher | *Local-First Financial Ledger & Intelligence App*

🐙 GitHub > | 📱 Google Play >

- Architected an offline-first finance app on Google Play, auto-capturing bank SMS and push alerts with 100% on-device processing via **NotificationListenerService** and **BroadcastReceiver.goAsync()**.
- Engineered a multi-region transaction parser (8 countries, 240+ heuristics) validated by **400+ unit and device tests**, eliminating false positives on OTP and balance alerts.
- Secured storage with **AES-256 SQLCipher**, Keystore-bound keys, biometric lock, and 600K-iteration PBKDF2 backups; built 6 reactive **Glance** widgets synchronized via Room and StateFlow.

Vigil | *On-Device Network Monitor*

🐙 GitHub >

- Built a passive Android **VpnService** tunnel parsing raw IPv4/UDP packet streams to extract DNS queries and attribute network traffic to application UIDs with zero root permissions.
- Engineered an in-memory reverse-label suffix trie indexing **90,000+ tracker domains**, enabling **O(L) sub-millisecond DNS classification** independent of dataset scale.
- Optimized application attribution with a **512-entry LRU cache** and built asynchronous **Room logging** that batches 50 DNS records or flushes every 2 seconds to eliminate main-thread disk I/O.

Fathom | *Offline-First Literature Reader & Audio Platform*

🐙 GitHub >

- Architected a multiplatform offline-first reader querying **15,163 canonical passages** across 7 traditions via **SQLDelight/SQLite**, delivering **<5ms full-text token search** with 100% on-device data residency.
- Engineered a low-latency background audio engine with **ExoPlayer**, managing system audio focus, multi-track ambient soundscape mixing, and smooth volume fade-out sleep timers.
- Structured a modular **Kotlin Multiplatform (KMP)** architecture with **MVI / StateFlow** state management, deploying automated midnight **Glance** widgets and a 4-palette dynamic theme engine.

Open Source Contributions

Signal-Android

📁 Commit 4b795a8 >

- Resolved a call-log grouping defect in Signal's production client by correcting SQL query ordering and timestamp clustering logic, preventing false merging across unrelated historical call records.

KDE Connect Android

🔗 3 Merged MRs >

- Modernized client internals across 18+ files by migrating legacy APIs to AndroidX **PreferenceManager**, **ActivityResultLauncher**, and predictive **OnBackPressedDispatcher** handling.

Achievements

Competitive Hackathons

6× Podium Finisher

- 1× Winner (1st Place) – IEM HackOasis 2.0
- 1× Cybersecurity Track Winner – InnoFusion 3.0
- 4× Runner-Up – Hexafalls, HackInverse 0.5, MetaMorph 2.0, CodeVoyage 2026