NOWFAL SALAHUDEEN

Technical Lead | Senior Flutter & Full-Stack Engineer
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PROFESSIONAL SUMMARY

Technical Lead and senior software engineer with 12 years of experience building mobile, desktop and backend software. Delivers production point-of-sale (POS) and ERP systems for restaurants and retail on Windows, Android, iOS and web, and fintech apps for a stock exchange. Works across the full stack: Flutter and Tauri clients; Rust (Axum, Loco.rs), NestJS and Dart backends; Cloudflare Workers. Integrates multiple payment gateways, including Razorpay and Stripe, from checkout to signed webhooks, refunds and go-live. Strong in Flutter testing (unit, widget, golden, integration), offline-first data, thermal printing and root-causing production issues.

TECHNICAL SKILLS

Mobile & Desktop: Flutter, Dart, Kotlin, Java, Native Android, React Native (Expo), Tauri, flutter_rust_bridge

Backend: Rust (Axum, Loco.rs), NestJS, Express.js, Dart (Shelf), Hono, FastAPI, Django, Laravel, REST APIs

Web: TypeScript, Angular, Svelte / SvelteKit, Astro

Databases: PostgreSQL, SQLite, Drift, MongoDB, Firestore, ObjectBox, Cloudflare D1, Appwrite, Parse Server

Cloud & DevOps: Cloudflare Workers, Pages, R2, KV; Firebase; Docker; Jenkins; GitHub Actions CI/CD; Linux server administration

Payments: Razorpay (Checkout, Orders, Payments, Subscriptions, Webhooks, Refunds), Stripe (Checkout, Payment Intents, Webhooks), UPI, UPI Autopay, card mandates, HMAC signature verification, idempotent webhook processing

Integrations: Agora video (RTC), Google Drive API, Firebase Cloud Messaging, Google Sign-In, ESC/POS thermal printers

Testing & Quality: Flutter unit, widget, golden (screenshot) and integration tests (flutter_test, integration_test), mocks and fakes, test coverage, Playwright end-to-end, static analysis (dart analyze, flutter_lints), SonarQube, Veracode, code review

PAYMENT GATEWAY INTEGRATION

- Integrated multiple payment gateways, including Razorpay and Stripe, into Flutter mobile apps, web apps and POS systems (UPI, cards, net banking, wallets; hosted and in-app checkout), with backends in NestJS, Express.js, Rust and Cloudflare Workers.
- Server-side checkout: orders and payment intents are created on the server, with the amount set by the server, never by the app; amounts are stored in the smallest currency unit (paise, cents) to avoid rounding errors.
- Payment verification: HMAC-SHA256 signature checks with constant-time comparison on both the client confirmation and the gateway webhook.
- Webhook-driven fulfilment: signed webhooks (order paid, payment captured) are the source of truth, so a purchase is delivered even if the app closes or loses network mid-payment.
- Idempotent processing: duplicate confirmations, gateway retries and out-of-order events never double-credit a customer; every payment is recorded once with an audit trail.
- Test and live safety: test-mode keys can only grant entitlements to named testers, sales can be switched off with a flag, and keys and webhook secrets are kept in server-side secrets per environment.
- Recurring billing: designed subscription billing (monthly to yearly plans) with UPI Autopay and card mandates, renewal and failure webhooks, cancel at period end and automatic licence renewal.
- Go-live: completed gateway activation and compliance (pricing, privacy, terms, refund and cancellation, delivery and contact pages), live-key switch-over, a live test payment and refund.

FLUTTER TESTING & QUALITY

- Full Flutter test pyramid: unit tests for business logic, widget tests for screens and dialogs, golden tests for visual output, and integration tests that drive the real app on emulators and devices.
- Golden (screenshot) tests lock the UI down across light and dark themes, phone, tablet and desktop sizes, and text scaling, so visual regressions are caught before release.
- Tests run in CI (GitHub Actions, Jenkins) on every change, with coverage reports and static analysis as merge gates.
- Writes regression tests for every production bug fixed: 600+ Flutter and 1,100+ Dart backend tests on a retail ERP & POS product.

PROFESSIONAL EXPERIENCE

Associate Consultant (Technical Lead) | 09/2023 – Present
VAAS Intelligent Technology Services Pvt. Ltd, Kochi

- Lead mobile and full-stack delivery of client products in hospitality, retail, fintech, crypto and healthcare.

- Piatto Pro, a restaurant POS used in the Gulf: build the Flutter POS for Windows (MSIX) and Android/iOS tablets, the Dart POS server, and NestJS + Angular back-office features.
- Piatto: delivered cash-session X/Z reports, kitchen order ticket (KOT) and print queues, per-user receipt routing with printer failover, ESC/POS thermal printing, multi-currency support (AED, SAR, OMR, MVR, INR), a Windows self-updater and a browser client covered by Playwright tests.
- Piatto: root-caused production issues, including a Windows UI freeze after idle (Win32 resource exhaustion), high idle CPU, duplicate daily order tokens and business-day data errors; server suite of 1,100+ tests.
- Bursa Malaysia investor app (Flutter): built Central Depository System (CDS) service flows such as Transfer of Securities, eRights and eDRP using the app's shared design system.
- Bursa Malaysia: led remediation of high-severity SonarQube issues and triaged Veracode security findings.
- Telemedicine app (Flutter): built the doctor-consultation journey end to end: doctor search, slot booking, patient intake, document upload, Razorpay payments with server-side verification and Agora video consultations; fixed production builds using the staging payment key.
- Crypto wallet app (Flutter, iOS and Android): sole developer; rebuilt the legacy app from scratch on a modular GetX architecture with Dio/Retrofit, Freezed and json_serializable type-safe models, through version 2.0.23.
- Crypto wallet: send and receive USDT (TRC-20) and other tokens on TRON with QR code generation and scanning, address book, live balances, price charts, filtered and paginated transaction history with TronScan links, and shareable receipts.
- Crypto wallet security: TOTP two-factor authentication, biometric login (Face ID, fingerprint) and a maker-checker workflow where makers start transfers and owners approve or reject them.
- Crypto wallet reliability: exact Decimal arithmetic for token amounts, send guardrails against overspending, TRX gas and activation errors handled, Firebase push and local notifications for transfers, approvals and withdrawals, dark mode and offline handling.
- Earlier projects: Eat and Drink Restaurants (ERP, CRM, POS), Cliniqally (mobile apps, CMS), servicelite.co, Inhabitr, and technical consulting for rightlife.com.

Senior Software Engineer | 11/2019 – 08/2023
Codmeric Infotech Pvt. Ltd, Infopark, Kochi

- Led research and development: built a video editor mobile app with its CMS, plus in-house products and prototypes.

Android Lead | 03/2018 – 11/2019
Vtoqa, Calicut

- Led Android development for the VTOQA e-commerce and logistics platform.

Android Developer | 08/2014 – 02/2018
Zeekoi Technologies, Kollam

- Built Android apps for clients, including a GST billing app, and Edu Portal, a Laravel platform for schools.

SELECTED PROJECTS

Retail ERP & POS suite | Flutter (desktop, mobile, web), Dart backend, SQLite

- GST billing, purchases with inclusive/exclusive GST, perpetual inventory, warehouse transfers, receipts, expenses, day book and till close.
- Migrated live shops from Vyapar; built a phone and tablet client for route sales; 1,100+ backend and 600+ frontend automated tests.

Restaurant POS with cloud licensing | Tauri, SvelteKit, Rust (Loco.rs / Axum), SQLite, Cloudflare Workers (Hono, D1, R2)

- Offline-first till with cryptographically signed licences that are verified offline, a free trial and renewal through the cloud.
- Designed Razorpay subscription billing (1, 3, 6 and 12 months) where a successful payment renews the licence on the till automatically, with no manual key.
- Cloud backup to R2, owner dashboard, and browser end-to-end testing.

Offline-first ledger app with payments | Flutter (Android), Cloudflare Workers, D1

- Google sign-in, Google Drive backup and restore, Excel/CSV import and export, reminders, English and Malayalam.
- Took Razorpay payments live end to end: server-side orders, signature verification, signed webhooks, idempotent crediting, a test-key guard and gateway compliance pages.

EDUCATION & LANGUAGES

B.Tech, University of Kerala | 2010 – 2014

Bachelor's Degree (Distance Mode), Dr. C. V. Raman University, Kota, Bilaspur | 2015 – 2018

Languages: English (professional), Malayalam (native)