RONAK KOSAMIA

470-331-0912 | kosamiar@gmail.com

linkedin.com/in/ronak-kosamia | ronakkosamia.github.io | ResearchGate | Google Scholar | Medium

PROFESSIONAL SUMMARY

Distinguished-level Principal Software Engineer with 13+ years architecting and delivering mobile, platform, and AI-driven systems across automotive, health-tech, and fintech domains. Renowned for leading cross-platform architecture using Android (Kotlin, KMP, Jetpack Compose) and cloud-native frameworks (AWS, Terraform, Kubernetes). Scaled multimillion-user products—GM MyBrand, Capital One AtWork, and Medtronic Mojave—through modern platform design, intelligent telemetry, and CI/CD automation.

Expert at uniting AI/ML, embedded systems, and mobile platforms to build next-generation digital ecosystems.

Recognized for mentoring engineering teams, architecting secure systems, and delivering enterprise platforms like Medtronic's Mojave Clinician App, Capital One's AtWork, and GM's MyBrand ecosystem.

TECHNICAL COMPETENCIES

Android (Kotlin, Jetpack Compose, KMP) • Cloud Architecture (AWS, Terraform, Kubernetes) • AI/ML (TensorFlow, PyTorch, MLKit, Edge AI) • Microservices, GraphQL, REST, gRPC • Embedded Systems, BLE, Telemetry • CI/CD (Jenkins, Fastlane, GitLab CI) • Observability (Prometheus, Grafana, OpenTelemetry) • Leadership, Mentorship, Cross-Functional Collaboration • Security (OAuth2, OpenID, JWT, SSO)

PROFESSIONAL EXPERIENCE

Medtronic, Minneapolis, MN — Principal Mobile Architect
Projects – Mojave Neuromodulation - Pelvic Health R&D | April 2025 – Present

- Architected the Mojave Clinician App integrating Android, iOS, and BLE device telemetry within FDA 62304 and ISO 13485 frameworks.
- Led **AI/ML-powered signal anomaly detection** pipeline using TensorFlow Lite and PyTorch, improving therapy diagnostics by 27%.
- **Developed Kotlin Multiplatform SDKs** for ENS/TNS telemetry data synchronization across mobile and clinician portals.
- Implemented secure **BLE pairing and OTA** update protocols for implantable neurostimulators.
- Automated compliance verification using GitLab CI, SonarQube, and static analysis—achieved **92% coverage** threshold.

Principal Software Engineer | Android • AI/ML • Cloud Platforms • Embedded Systems

- Collaborated with regulatory teams for design traceability and audit readiness, reducing validation cycle time by 30%.
- Mentored teams across iOS, Android, and QA, aligning app modernization with regulated software standards.
- Led architecture reviews integrating AI-assisted telemetry dashboards with AWS IoT Core and S3 pipelines.
- Led **ML-based algorithm research for real-time sensing optimization**, developing Kotlin Multiplatform algorithms that classify electrode dominance and auto-tune stimulation parameters for pelvic floor therapy
- Designed and validated a **closed-loop therapeutic intelligence engine** capable of processing pseudo-monopolar (PM) sensor signals to dynamically adjust amplitude, frequency, and pulse width.

Capital One, Remote — Principal Software Engineer — AtWork Enterprise Platform | September 2024 – April 2025

- Directed full-stack mobile platform development (AtWork) using Kotlin, Swift, and GraphQL for workflows like PeopleFinder, FixIt, and Parking.
- Implemented enterprise-grade **SSO with OAuth2 and OpenID Connect** using Azure AD and Auth0 for 8,000+ employees.
- Engineered cloud-first orchestration flows (AWS Lambda, Firebase Functions) reducing API latency by 35%.
- Created **NLP-powered search functionality** for PeopleFinder, improving retrieval accuracy by 20%.
- Developed **backend-driven UI** and role-based feature toggling, enabling real-time configuration without redeployment.
- Optimized **CI/CD pipeline automation** with Jenkins, Gradle, and Fastlane, doubling release velocity and code stability.
- Enhanced observability using Prometheus and Grafana dashboards to achieve 99.9% app uptime.
- Championed **Kotlin Multiplatform adoption** and code reuse across Android/iOS teams, cutting duplicate logic by 40%.
- Mentored mobile teams in modular architecture, design system evolution, and Compose best practices.

General Motors, Warran, MI — Mobility & Cloud Platforms
Projects: MyBrand Platform / SuperCruise / Marketplace / Payments / Shop 2.0

Principal Software Engineer | January 2023 – Sep 2024 | Roswell, GA

Principal Software Engineer | Android • AI/ML • Cloud Platforms • Embedded Systems

- Modernized GM's Connected Mobility Platform supporting 20+ global vehicle brands including Cadillac, Buick, and Chevrolet.
- Built **Kotlin + Rust SDKs** for MyBrand, AppShop, Payment App, and Smart Trailering to enable secure connected services.
- Integrated **TensorFlow Lite** models into Android apps, enabling real-time AI features.
- Integrated HERE SDK, Kafka streams, and gRPC for real-time **EV routing** and SuperCruise navigation updates.
- Implemented predictive diagnostics using **ML pipelines**, reducing vehicle downtime by 18%.
- Migrated RxJava architecture to Kotlin Coroutines/Flow improving responsiveness by 45%.
- **Directed a team of 5+ engineers** through cross-functional releases, performance reviews, and mentorship.

Senior Software Developer (Android / Embedded) | June 2017 – January 2023 | Detroit, MI

- Developed voice-controlled infotainment (Android Auto + **NLP**) and **AR-assisted parking** (iOS ARKit).
- Created companion SDKs for BLE-based charger pairing (Ultium PowerUP) and real-time diagnostics.
- Modernized event architecture from RxJava → Coroutines/Flow; decreased crash rates > 30%.
- **Piloted 3D/AR dashboards** with OpenGL & Compose, driving future in-vehicle visualization standards.
- Built **data visualization dashboards** to provide actionable business insights.
- Deployed CI/CD pipelines with Jenkins and Fastlane, ensuring consistent, secure releases across vehicle ecosystems.
- Designed multi-region AWS infrastructure (Lambda, DynamoDB, GraphQL) handling 10K+ telemetry events/sec.

Thinking Books LLC, Davis, CA — Principal NDK Developer / Framework Architect | January 2017 - June 2017

- Developed high-performance native libraries using C++ and Android NDK for cross-platform runtime acceleration.
- Engineered a lightweight virtual machine with custom bytecode and JIT compilation improving execution speed by 40%.
- Implemented **JNI bridges between Java and C++** for multimedia and cryptographic operations.

- Optimized memory footprint and parallelism using OpenMP and lock-free data structures.
- Built dynamic scripting engine integrated with Android SDK for runtime automation and rapid testing.
- Led performance profiling and native **debugging using LLDB** and Perf tools to eliminate latency issues.
- Contributed reusable C++ components for internal frameworks, enhancing modularity and portability.
- Collaborated with QA **to automate NDK test coverage** pipelines for multi-ABI validation.

Washington Metropolitan Area Transit Authority (WMATA), Washington, DC — Senior Mobile Developer – GIS Transit Systems | December 2015 – January 2017

- Redesigned Bus Stop Editor and Transit Tracking App using Angular, Ionic, and **ESRI GIS** for live mapping and schedule updates.
- Delivered real-time data streaming and push notifications improving service accuracy by 40%.
- Built **Node.js backend APIs** for data synchronization and operator dashboards.
- Integrated ArcGIS APIs for dynamic routing, mapping, and visualization across 1,000+ bus routes.
- Implemented offline-first mobile workflows with local SQLite caching and background sync.
- Automated builds, testing, and deployments via Jenkins and Firebase CI/CD pipelines.
- Improved route validation speed by 25% through efficient GIS query optimization.
- **Trained junior developers and GIS analysts** on cross-platform mobile deployment best practices.

FoodCrave Mobile Apps, San Ramon, CA — Senior Mobile Application Developer | September 2014 – December 2015

- Built TriValley Food Delivery App for iOS and Android integrating Google Maps, Stripe payments, and live order tracking.
- Architected hybrid mobile stack using **React Native, Angular, and Node.js** for rapid feature rollout.
- Reduced response latency by 25% via caching and RESTful API optimization.
- Implemented secure payment flows with Google Pay and Stripe SDKs ensuring PCI compliance.
- Developed real-time driver tracking and order notifications using WebSockets and Firebase.

- Collaborated with backend and design teams for unified UX and API alignment.
- Delivered MVP ahead of schedule boosting user adoption within first 3 months by 30%.
- Conducted analytics instrumentation for conversion and retention optimization.

Polaris Inc., Surat, India — J2EE Developer – Enterprise Resource Systems | 2010 – 2013

- Developed ERP modules for Finance, HR, and Supply Chain using Java, Spring, and Hibernate.
- Implemented REST APIs enabling seamless module integration and third-party interoperability.
- Optimized SQL queries achieving 30% faster transaction processing and improved data integrity.
- Led deployment and tuning of application servers (Apache Tomcat, Oracle DB) for high availability.
- Automated report generation and batch data reconciliation jobs with Spring Batch.
- Collaborated with business stakeholders to refine system requirements and deployment strategies.
- Contributed reusable components improving team delivery velocity by 20%.
- Supported production systems and coordinated hotfix deployments minimizing downtime.

EDUCATION & CERTIFICATIONS

M.S., Computer & Information Systems Security – University of the Cumberlands (2018)
B.S., Computer Engineering – Gujarat Technological University (2013)
Microsoft Certified: Azure Solutions Architect Expert (2025–2026) | Google Associate
Android Developer (2019–2020) | SAFe 4 Practitioner (2024–2025)