

Muhammad Ahmad Mahmood

Senior Software Engineer – Mobile Apps

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PROFESSIONAL SUMMARY

Versatile **Senior Software Engineer** with **5+ years of experience** building production-grade mobile applications and full-stack systems across **government, fintech, healthcare, fitness, and e-commerce** domains. I specialize in delivering scalable, high-performance **Flutter** platforms with **secure architectures, native SDK integrations, and optimized state management**, having led government-scale apps under **Saudi Vision 2030** for the **Saudi Ministry of Health** and the **Royal Commission for Riyadh City**. My work blends **mobile engineering** with **AI integration**, including **RAG systems, LLM-powered workflows, and MCP-based development pipelines**, to ship intelligent, data-driven features. Skilled at **leading cross-functional teams**, owning **end-to-end product delivery**, and **independently shipping** apps with thousands of organic users, I thrive in fast-paced environments and enjoy solving complex, real-world problems through technology.

SKILLS

- **Languages:** Dart, JavaScript, Python, C++
- **Frameworks:** Flutter, React.js, Next.js, Node.js, FastAPI, Firebase Cloud Functions, Serverless Architecture
- **Databases:** MongoDB, Firebase Firestore, Supabase, SQLite, Hive, Data Modeling, Local-first Architecture
- **State Management:** Riverpod, BLoC, GetX, Provider
- **APIs & Integrations:** REST APIs, GraphQL, MQTT, WebSockets, HyperPay, Stripe, RevenueCat, Google Maps, Firebase Services, Agora, Zego Cloud, Native SDK Integration, Platform Channels
- **Tools & DevOps:** Git, GitHub, CI/CD (GitHub Actions), Crashlytics, Google Analytics, SonarQube, Postman, SSH, Claude Code, Cursor, AI Driven Development
- **AI / ML:** RAG Systems, LangChain, OpenAI API, Agentic AI, MCP Servers, Prompt Engineering, TensorFlow Lite, Embeddings, LLM Integration
- **Architecture & Engineering:** Clean Architecture, MVVM, MVC, Modular Architecture, System Design, Mobile Security, Performance Optimization, Debugging
- **Product & Leadership:** Technical and Product Leadership, Critical Thinking, Business Intelligence, Agile/Scrum, Team Collaboration, Mentorship, App Launch, Analytics & Iteration, App Store Optimization (ASO)

PROFESSIONAL EXPERIENCE

- **AZM Development (Subsidiary of Saudi AZM KSA)** Islamabad, Pakistan
Senior Software Engineer *Jan 2025 – Present (1 year 6 months)*
 - Led engineering of government-scale Flutter platforms (Shefa, Mehrab, Riyadh Air Quality & Noise) serving **10K+ active users**, owning **system architecture** and end-to-end delivery of production-grade mobile applications.
 - Designed and implemented secure cross-platform HyperPay native SDK integrations via Flutter Platform Channels, enabling payments (MADA, Apple Pay) and national identity verification under strict compliance requirements.
 - Improved application performance by **25%** through system-level optimizations including API pipeline redesign, intelligent caching strategies, and optimized app initialization flow.
 - Reduced production crash rate by **20%+** using Crashlytics-driven reliability engineering, root-cause debugging, and stabilization of release and force-update mechanisms.
 - Implemented **fintech-grade mobile security architecture** including SSL pinning, encryption, code obfuscation, secure storage, and hardened native communication aligned with **Saudi DGA compliance requirements**.
 - Established engineering excellence practices by introducing **CI/CD via Firebase Distribution, SonarQube quality gates**, and structured unit/integration testing with coverage enforcement.
 - Designed AI-ready repository architecture and MCP-based development workflows with automated documentation pipelines, improving engineering productivity by **20–25 hours per week**.
- **Flirtmetrics UG (haftungsbeschränkt)** Darmstadt, Germany (Remote)
Technical Project Manager – Part-time *Jul 2025 – June 2026 (1 year)*
 - Joined mid-product and rapidly assessed the existing **codebase, architecture, and team setup** to identify priorities, making early **strategic decisions** balancing **cost, timeline, and technical feasibility** without the luxury of greenfield planning.
 - Led **full-stack development** of a **data-driven interaction tracking and improvement platform** – mobile on **Flutter**, backend on **NestJS** with **MongoDB** – owning **architecture, delivery, and technical decisions** throughout.
 - Designed the **core product engine**: an **in-app improvement program** that tracked **user interaction patterns** and surfaced **personalized, data-backed recommendations** to drive **measurable behavior change**.
 - Conducted **market research** and **competitive analysis** to sharpen **product positioning**, validate **feature priorities**, and identify gaps in a competitive space.
 - Managed and coordinated the **development team**, assigned tasks, made **architectural calls**, and **mentored team members** with a constant eye on **delivery speed** and **cost efficiency**.
 - Ran the **full app launch cycle** – **store submissions, ASO, analytics instrumentation, and post-launch iteration** based on **real user data**.

- Webrange Solutions** Islamabad, Pakistan
Software Engineer – Flutter Jul 2024 – Dec 2024 (7 months)
 - Delivered **3+ production Flutter applications** across fitness, e-commerce, booking, and location-based domains, owning **core feature development** and **end-to-end mobile delivery**.
 - Enabled **subscription-based revenue models** by integrating **in-app purchases**, **payment gateways**, and optimizing onboarding flows, contributing to **\$5K+ MRR growth**.
 - Implemented **real-time and media-heavy features** including **VideoSDK-based live streaming**, recording, and **compression pipelines** for high-performance video applications.
 - Developed advanced **location-based systems** including **real-time tracking**, distance calculations, and **GPX file generation** for navigation and fitness use cases.
- Sharplogicians** Rawalpindi, Pakistan
Flutter Developer Jul 2023 – Nov 2024 (1 year 4 months)
 - Built and shipped a **production Flutter application** from scratch to deployment used by **thousands of users**, owning **system architecture**, **state management**, and **feature planning** across the full development lifecycle.
 - Implemented **real-time communication systems** including **VoIP audio calling**, messaging, and **push notifications** using **native modules**, **Firebase Cloud Messaging**, and **Firebase Firestore**.
 - Integrated **secure authentication flows** (**Apple**, **Google**, **Facebook login**) and third-party APIs including **payment systems** (**Stripe**), ensuring **seamless onboarding** and **transaction reliability** across user types.
- Cheetah Agency** Dallas, Texas (Remote), USA
Associate Software Engineer Apr 2024 – Jul 2024 (4 months)
 - Contributed to **two production carpooling applications** across **Flutter** and **React Native**, delivering **stable releases** and **production-ready features** in **cross-platform environments**.
 - Improved application performance by **40%** by diagnosing and resolving a **critical memory leak** through **asynchronous programming** and **multithreading optimization** techniques.
 - Integrated and optimized **GraphQL APIs** across mobile and backend systems, resolving **schema inconsistencies** and improving **data fetching reliability and efficiency**.
 - Maintained **NestJS backend services** and **MySQL database operations**, ensuring **scalable server-side architecture** and **optimized query performance**.
 - Led development of a **React Native application** from scratch, contributing to **architecture setup**, **feature implementation**, and **production deployment**.
- Fazaia Medical College** Islamabad, Pakistan
Mobile Application Developer May 2023 – Oct 2023 (6 months)
 - Developed **CogQuest**, an **ML-powered cognitive assessment** mobile application for **post-COVID-19 research**, improving **diagnostic accuracy by 20%** and **assessment speed by 50%** using **TensorFlow Lite**, **voice recognition**, and **data visualization pipelines**.
 - Designed and implemented **real-time patient data processing workflows** using **Firebase**, supporting research analysis across **1K+ participants** and enabling **large-scale clinical study data collection**.
 - Integrated **machine learning models** for **real-time classification** of patient inputs (drawings and responses), improving **cognitive decline detection accuracy by up to 35%**.
 - Optimized mobile performance through **multithreading** and **asynchronous processing**, improving responsiveness and user experience for clinical assessments.
 - Contributed to **research publication efforts** by enabling **scalable data pipelines** and **structured dataset management** used in **2+ peer-reviewed medical studies**.
- Cybrnode** Lahore, Pakistan (Remote)
Flutter Developer – Intern Apr 2022 – Jul 2022
 - Delivered **5 intern-grade Flutter app modules** implementing **authentication**, **offline storage**, and **real-time data synchronization** using **Firebase** and **REST APIs** with **clean architecture principles**.
 - Contributed to **end-to-end mobile application development** including **UI implementation**, **state management**, and **backend integration** across multiple internal projects.
 - Developed and deployed mobile applications on **Google Play Store**, gaining experience in **release pipelines**, **app lifecycle management**, and **user-facing production systems**.
 - Applied core software engineering principles including **OOP**, **modular design**, and **API integration** while working in **Agile-based development workflows**.

NOTABLE PROJECTS

- Shefa – Medical Case Donation Platform:** Large-scale charity platform enabling verified patient treatment funding through secure donations for the Saudi Ministry of Health.
- Salah Streak – Prayer Habit Builder :** Privacy-first offline Flutter app with 1K+ organic downloads and 4.8/5 rating. Built local-first architecture using Hive, location-based prayer times, native Android widgets, zero ad spend.
- Riyadh Air Quality & Noise Monitor – Government App:** Civic-tech Flutter app for the Royal Commission for Riyadh City (RCRC) delivering real-time environmental data from 30 sensors. 10K+ downloads on both stores
- AI Portfolio Chatbot (RAG System):** Production RAG system built with Next.js, FastAPI, LangChain, and ChromaDB. Indexed 132 documents using HuggingFace embeddings for semantic retrieval and deployed on self-managed cloud infrastructure using PM2, Nginx, and SSL.

EDUCATION

- **Air University** Islamabad, Pakistan
Bachelor of Science – Computer Sciences; CGPA: 3.21 2020 – 2024

AWARDS & ACTIVITIES

- **Medal of Honor** – Awarded by **Air University** for exceptional performance and community contributions.
- **Runner-Up, Mobile App Development Competition** – *Visio Spark 2023*, **COMSATS University**.
- **Vice President & Microsoft Learn Student Ambassador** – **Air University**.