

# Mohammad Aziz

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## EXPERIENCE

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### Venturenox · Full Stack Engineer — AI Systems & Backend Infrastructure *Feb 2025 – Present*

*Venture: SarahAI — AI-powered WhatsApp communication platform (thesarahai.com)*

- ▶ Designed and integrated a multi-model AI pipeline supporting proprietary models (OpenAI GPT-4o, GPT-4.5) and voice models (ElevenLabs SDK with Gemini 2.5 Flash, Gemini 3 Pro/Mini, and Claude Sonnet 4.5), enabling natural voice-based user interactions.
- ▶ Built a dedicated MCP (Model Context Protocol) server to extract maximum performance from fallback open-source models (GPT OSS 120B and 20B) hosted on Groq and Cerebras, enabling intelligent model routing based on latency and cost.
- ▶ Engineered 100% accurate agent pipelines using MCP and RAG workflows with Langfuse, implementing proper context management and self-learning capabilities where agents update their own knowledge base from past interactions.
- ▶ Re-architected the notification and scheduling system from Celery CRON jobs to a fully serverless AWS stack (Lambda + SQS + EventBridge Scheduler), making it infinitely scalable and eliminating infrastructure overhead for time-based WhatsApp messaging.
- ▶ Designed a fully Meta-compliant WhatsApp notification system, including opt-in consent templates and automated consent-renewal flows, ensuring adherence to Meta messaging policies via the Respond.io BSP integration.
- ▶ Built subscription lifecycle management and feature-gating logic tied to user subscription expiry, enforcing granular access controls and entitlements across the entire platform.
- ▶ Refactored the Task Module to communicate directly with the AI agent, dynamically invoking the correct agent tools based on task context and user intent.
- ▶ Led prompt engineering and iterative optimization in Langfuse, tracking prompt versions and improving AI response quality, accuracy, and latency across all agent flows.
- ▶ Improved overall system performance through cache-layer optimizations, significantly reducing redundant network calls and response times across API-heavy workflows.

*Stack: Django · AWS Lambda · SQS · EventBridge · OpenAI GPT-4o/4.5 · ElevenLabs · Gemini 2.5 Flash · Claude Sonnet 4.5 · MCP · RAG · Langfuse · Groq · Cerebras · Respond.io · PostgreSQL · WhatsApp Business API*

### Informly · Full Stack Engineer (Founding) *Jan 2023 – Present*

- ▶ Served as founding engineer for a business growth platform; drove all major architecture decisions across the full stack from day one, balancing velocity with long-term scalability.
- ▶ Designed and integrated an AI service layer using Pydantic schemas as a strict contract between the frontend and AI backend, powering modules including survey creation, metrics understanding, and a chat-based interaction agent that assists users.
- ▶ Migrated the entire API layer from REST to GraphQL with Apollo, delivering measurable performance gains, reduced over-fetching, and significantly lower server stress.
- ▶ Architected and built a drag-and-drop workflow automation engine using Hatchet, enabling non-technical users to define, configure, and trigger custom multi-step business automations without writing code.
- ▶ Implemented in-memory Apollo caching strategies that eliminated redundant network requests and delivered a seamless, low-latency UI experience across all Next.js pages.
- ▶ Designed multi-location support allowing businesses to manage multiple branches from a single account, combined with role-based access control (RBAC) with fine-grained permission tiers for enterprise clients.
- ▶ Built customer-driven ticketing and support systems, automated customer workflows, and a configurable notification layer that adapts to client business logic.

*Stack: Nx Monorepo · Next.js · TypeScript · Node.js · Nexus · Apollo GraphQL · PostgreSQL · Hatchet · Ant Design · Pydantic · Python*

### Alharam Hostel · Full Stack Engineer *Jan 2022 – Feb 2023*

- ▶ Designed and built a fully custom biometric attendance system from scratch, integrating ZKTeco hardware via Python SDK to enable real-time tracking of hostel residents and staff with millisecond sync accuracy.
- ▶ Developed rich interactive analytics dashboards using D3.js and Recharts, surfacing attendance trends, anomalies, user activity heatmaps, and configurable date-range comparisons for management.
- ▶ Built a configurable settings panel allowing administrators to switch graph types, adjust sync frequency, and define data intervals without touching code.
- ▶ Implemented live device-to-backend synchronization using WebSockets and SSEs, eliminating polling and ensuring instant reflection of biometric events in the dashboard.
- ▶ Designed smart alerting rules that triggered notifications for anomalous attendance patterns, late clock-ins, and unrecognized biometric attempts.

*Stack: Next.js · Django · PostgreSQL · WebSockets · SSE · D3.js · Recharts · TailwindCSS · Ant Design · Framer Motion · Python · ZKTeco SDK*

## RipeOnTime · Software Engineer (Contract) *Jul 2021 – May 2022*

- ▶ Joined as one of the founding engineers for a Texas-based online grocery and vendor platform; took ownership of the admin portal architecture from initial design through production deployment.
- ▶ Designed and built a scalable role-based admin portal with a tiered subscription model, supporting distinct permission levels for vendors, admins, and super-admins across multiple storefronts.
- ▶ Integrated Stripe payment gateways for subscription billing and one-time payments, building webhook handlers for subscription lifecycle events including renewals, failures, and cancellations.
- ▶ Promoted to lead engineer role; mentored junior developers, led code reviews, established coding standards, and coordinated cross-functional hiring for the engineering team.
- ▶ Streamlined CI/CD workflows using Azure DevOps deployment pipelines, reducing deployment time and eliminating manual release steps.
- ▶ Contributed to vendor onboarding flows, inventory management modules, and order tracking systems across the platform.

**Stack:** JavaScript · TypeScript · React · Redux · Node.js · Express.js · Sequelize · PostgreSQL · Stripe · Azure DevOps · Material UI

## System Junctions · Frontend Developer *Dec 2020 – Jan 2022*

*Intern (Dec 2020 – Mar 2021) → Junior Frontend Developer (Mar 2021 – Jan 2022)*

- ▶ Led frontend development for MediCorp — a digital healthcare system commissioned by a group of hospitals — providing doctors and clinical staff with a unified platform for managing patient records, appointment time slots, and medical reports in a single compliant interface.
- ▶ Placed a strong emphasis on UI/UX quality and accessibility throughout the MediCorp build, working closely with stakeholders to ensure the interface met clinical workflow requirements and compliance standards for healthcare software.
- ▶ Built reusable component libraries across multiple client projects using Storybook, ensuring consistent design systems and reducing duplication across teams.
- ▶ Collaborated across time zones with international clients and designers, gaining hands-on experience in async remote delivery across React, React Native, and Angular stacks.
- ▶ Contributed to multiple diverse client applications, building custom features to enhance functionality and UX across web and mobile.

**Stack:** Next.js · React · React Native · Angular · GraphQL · MongoDB · Storybook · Material UI · Chakra UI · Bootstrap · TypeScript

## EDUCATION

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### University of Central Punjab, Lahore, PK · *Fall 2022 – Spring 2026*

B.Sc. Computer Science (Expected: Spring 2026)

**Coursework:** Data Structures & Algorithms · Databases · Artificial Intelligence · Networking · Cloud Computing · Android Development · Game Development · Linear Algebra

## PROJECTS

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**IMND** (2024) NGO awareness and advocacy website built with Next.js SSR and Framer Motion. Developed in collaboration with an NGO to raise awareness and drive targeted campaigns.

**Taskly** (2020) Full-stack task management application designed for intuitive productivity and team organization. *Node.js · Express.js · MongoDB · Mongoose · React · Material UI*

**E-Store** (2018) Full-stack e-commerce web application with core shopping, cart, and order management features. *HTML · CSS · PHP · MySQL*

## TECHNICAL SKILLS

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**Languages** JavaScript · TypeScript · Python · SQL

**Frontend** React · Next.js · Redux · D3.js · Three.js · Rechart · Chart.js · Framer Motion · Storybook · Tailwind · AntDesign · Chakra UI · Material

**Backend & APIs** Node.js · Nest.js · Django · Express.js · GraphQL · Apollo · REST · Nexus · Hatched

**Databases & ORM** PostgreSQL · MongoDB · TypeORM · Prisma · Mongoose · Sequelize

**AI & LLMs** OpenAI GPT-4o/4.5 · Gemini 2.5 Flash · Claude Sonnet 4.5 · ElevenLabs · MCP · RAG · Langfuse · Groq · Cerebras · Pydantic · Prompt Engineering · Agent Orchestration

**Cloud & DevOps** AWS (Lambda · SQS · EventBridge) · Azure DevOps · Git · GitHub

**Tools** VS Code · WebStorm · Postman · Figma · Jira · ClickUp · Slack · Trello · Blender · Android Studio