HASAN AFZAL

Senior Software & AI Engineer | Ruby on Rails, React, Python

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PROFESSIONAL SUMMARY

Senior Software Engineer with 5+ years of experience, specializing in end-to-end SaaS design, development, and delivery. I architect AI-driven platforms, including LLM pipelines, RAG systems, and scalable cloud infrastructure, from concept to production. I combine strategic system design with disciplined execution, delivering complex projects on schedule, cutting costs by up to 40%, and scaling to millions of users. I've led multi-quarter modernizations, designed payment systems, and built AI features that boost engagement and revenue.

TECHNICAL SKILLS

Languages: Ruby, Python, TypeScript, JavaScript.

Frameworks: Ruby on Rails, FastAPI, Next.js, React, Node.js.

AI & LLM Technologies: RAG Systems, LangChain, LLM Fine-tuning, AI Agents, OpenAI API, Prompt Chaining, Pinecone.

Cloud & Infrastructure: AWS (EC2, Lambda, S3, CloudFront), Docker, Nginx, CI/CD Pipelines, Cloudflare Workers.

Databases: PostgreSQL, MongoDB, MySQL, Redis, Vector Databases.

PROFESSIONAL EXPERIENCE

3Ssolutions — Remote
Team Lead & Senior Software Engineer — *April 2022 – Present*

Led a full-stack team of **15+ engineers** architecting modernization strategies, transitioning legacy monoliths into scalable microservices architectures.

Orchestrated a **Strangler Fig migration** (React/Rails) for an EdTech platform, implementing **route-by-route** traffic routing and **unified authentication**. Introduced a **Query Pattern** to decouple business logic, reducing infrastructure costs by **40%** and improving page loads from 15s to 1-2s.

Designed a robust **Ticket Inventory System** for a high-traffic Event platform, handling concurrency during massive traffic surges of **1M+ monthly users**. Led a campaign to optimize database queries and page loading speeds.

Integrated **Elasticsearch** to power Natural Language and Full-Text Search, optimizing queries for millions of records. Architected advanced **AI pipelines** (LLM fine-tuning, RAG) and implemented **FFmpeg** for robust cross-platform media pipelines.

Southville Solutions — Lahore, Pakistan
Software Engineer — *July 2021 – April 2023*

Engineered scalable backend services for Fintech and HR domains requiring high integrity, using **Docker** for containerization and **AWS EBS** for persistent storage reliability.

Developed core financial infrastructure including secure checkout and batch settlement logic. Built real-time features and complex **multi-state compliance workflows** for a workforce management platform.

Contributed to the backend architecture for a community engagement platform and implemented **CloudFront versioning strategies** for instant content updates.

Fostered team growth by providing hands-on mentorship to juniors and training interns on development workflows and best practices.

TeachCreatix — Lahore, Pakistan
Associate Software Engineer — *Jan 2021 – July 2021*

Contributed to full-stack feature development using **React** and **Ruby on Rails** within an Agile environment, participating in daily stand-ups, sprint planning, and code reviews.

Implemented RESTful API integrations and **webhooks**, managed database configurations, and configured **Nginx** servers on AWS within a production SaaS environment.

AI & Generative Engineering

EvyAI | *Python, FastAPI, RAG, LangChain, Pinecone, Firebase*

Architected a **Unified Authentication** system (Firebase) enabling seamless SSO across a Chrome Extension and Web App.

Engineered a Contextual AI Engine using RAG and Vector DBs to deliver persona-specific content with sub-second latency.

Built an event-driven API to handle high-volume concurrent requests, scaling the platform to thousands of active users.

Elftapes | *Next.js, Node.js, FFmpeg, AWS S3, OpenAI*

Engineered a **script ingestion pipeline** using OCR (Tesseract) to convert image-based scripts into structured dialogue data.

Built a server-side media synthesis pipeline using **FFmpeg** to synchronize AI audio tracks with user video recordings.

Implemented S3 multipart uploads with lifecycle policies to efficiently handle large media files and optimize storage costs.

Draftr | *Next.js, Rails, AI Agents, Drag & Drop, SEO*

Architected a **no-code drag-and-drop builder** allowing users to launch sites with pre-built themes and automated subdomains.

Engineered an **autonomous AI blogging agent** using RAG to generate SEO-perfect articles and AI images.

Implemented a strategic **backlink exchange network** to boost domain authority for user-generated sites.

High-Scale SaaS & Modernization

Piqosity | *Microservices, Neo4j, Postgres, Nginx, Elasticsearch*

Orchestrated a zero-downtime **Strangler Fig migration** (Route-by-Route) with **unified authentication** across systems.

Implemented a strict **Query Pattern** to decouple business logic, enabling seamless schema optimization and modern migrations.

Built a **Dynamic Assessment Engine** and integrated **Redis**, cutting page loads from **15s to 1-2s** and costs by **40%**.

Upcoming Events | *Rails, Redis, CloudFront, Docker*

Scaled platform to **1M+ monthly users** using a custom **Ticket Inventory System** to prevent race conditions.

Architected a Payment Orchestration Layer (Stripe, PayPal, Apple Pay) with strict idempotency to prevent double-charging.

Optimized database indexing and payload sizes, reducing average database response time by over **50%**.

Fazier | *Next.js, FastAPI, PostgreSQL, AWS Lambda, EC2*

Deployed a high-availability architecture using **AWS EC2** and **Nginx**, serving a real-time product launch community.

Offloaded asynchronous tasks to **AWS Lambda** serverless functions to maintain lightweight API performance.

QuickCard | *Rails, Stripe Connect, Redis, Elasticsearch*

Developed core logic for **splitting funds between merchants (By Rate)**, ensuring precise multi-party fund distribution.

Resolved critical production bugs to stabilize the payment flow and implemented a batch settlement engine for reconciliation.

EDUCATION

Comsats University Lahore, Pakistan
Software Engineering *2016 – 2020*