Musaib Shaikh

Software Engineer · Backend and AI Systems

shaikhmusaib015@gmail.com • +91 9028518399 • musaibshaikh.com • linkedin.com/in/musaib-shaikh-686835172 • github.com/RDJ2000

Software engineer who studies how systems are designed before building on them. Owns data and AI pipelines from architecture to delivery and builds verified, production AI tooling on legacy banking platforms for a global client. Grounded in concurrency, storage and Linux, with a published paper on BurrowDB.

EXPERIENCE

Tata Consultancy Services · Systems Engineer — Pune, MH | Jan 2025 – Present

- Built an agentic RAG tool that maps field-level relationships across a legacy banking estate of 1,000+ tables in multiple databases (50+ columns each, millions of records) for migration, reducing analysis from days to hours (Python, LangChain, vector retrieval over schema metadata).
- Designed a verification loop in which the model proposes each relationship and generates SQL that runs against the source databases to confirm or reject it, so every result is evidence-backed.
- Overcame context-window limits with structure-aware chunking, batching and per-table analysis, lowering LLM cost and improving accuracy on dense schema metadata.
- Own the pipelines from architecture to delivery, working with global stakeholders under banking governance and audit controls.
- Migrated legacy RHEL environments to a newer release without interrupting dependent services.

Paper Box Business Services Pvt. Ltd · Software Engineer — Pune, MH | Apr 2023 – Aug 2024

- Owned core features (listings, analytics, insurance workflows) of live, user-facing platforms for insurance and real-estate customers, end to end from requirements and design through production deployment (Node.js, Express.js, Angular, MongoDB).
- Integrated the Razorpay and BillDesk payment gateways into the insurance product for policy purchases, renewals and premium collection.
- Worked directly with clients, payment gateway teams and insurance vendors to turn requirements into maintainable services and modular components, delivering seamless integrations on tight budgets.
- Reduced monthly infrastructure cost by ~45% by re-architecting cloud deployments, optimising database queries and right-sizing resources.

Conlis Services Pvt. Ltd · Software Developer — Pune, MH | Dec 2022 – Mar 2023

- Built a proof-of-concept VR app for pediatric physiotherapy with avatar-led, gamified exercises, turning clinicians' requirements into interactive mechanics.

Freelance and Independent Developer · alongside studies — 2016 – 2022

- 2019–2022: delivered four projects across e-commerce (Razorpay payments), game development in Unity for edutech, and blockchain servers handling crypto transactions and NFTs.
- 2016–2019: delivered two full-stack web applications on the MEAN stack (MongoDB, Express, Angular, Node.js).

INDEPENDENT SYSTEMS WORK

BurrowDB · Key-value store (Rust) — 2025 | v0.2.0

- Built as an experiment in database design, not for speed: actor-per-key concurrency with a block file per key and no shared lock on document data, over an async TCP server with a compact binary protocol.
- Implemented hot/cold tiering with LRU eviction, tunable durability (deferred persistence, optional fsync), FlatBuffers values, a built-in dashboard and Prometheus metrics.
- Published a concept paper on Zenodo (2025): *BurrowDB: Architectural Exploration of Block-Based Storage Utilizing Actor-Managed Tiering*, DOI 10.5281/zenodo.18212609.

Project Astrum · Decentralized runtime (Rust) — 2024 – Present

- Exploring peer-to-peer networking and fault tolerance across independent network and data layers (in progress).

SKILLS

AI: LLM integration, RAG, AI agents, LangChain, vector databases, semantic retrieval, prompt engineering, output verification

Backend & Systems: REST APIs, async services, concurrency, actor model, storage design, message queues (IBM MQ), Linux (RHEL, Ubuntu Server), Node.js, Express, Flask, Angular, MongoDB, relational databases

Cloud & Platform: OpenShift, AWS, GCP, Docker, Git

Languages: Python, Rust, TypeScript, JavaScript, SQL, Bash

EDUCATION

B.Tech, Computer Engineering · Godavari College of Engineering, Jalgaon · GPA 9.2/10 — 2022

Diploma, Computer Engineering · Shri Gulabrao Deokar Polytechnic, Jalgaon — 2019