

SYED MOHAMMAD SAAD

Software Engineer | Backend & Distributed Systems

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SUMMARY

Information Technology graduate (PICT Pune, CGPA 8.94/10) building secure, scalable backend and distributed systems in Java and Python. Sole architect and developer of FinTwin.ai, a production-grade four-service platform on Spring Boot, FastAPI, PostgreSQL and Kubernetes with ~180 automated tests. Merged contributions to Elasticsearch and Apache Lucene, plus two published research papers. Seeking a full-time backend engineering role.

TECHNICAL SKILLS

Languages & Fundamentals: Java 21, Python, SQL, JavaScript, Data Structures & Algorithms, OOP, Operating Systems, DBMS, Computer Networks

Backend & APIs: Spring Boot, Spring Security, FastAPI, Node.js, Express.js, REST APIs, Microservices, Socket.io

Databases & Caching: PostgreSQL, MySQL, MongoDB, Redis, Flyway, HikariCP, Caffeine, Schema Design, Query Optimization

Cloud & DevOps: Docker, Kubernetes, AWS (Lambda, EC2, S3, API Gateway), GCP, CI/CD, GitHub Actions, Prometheus, Grafana, Git

Security & Testing: JWT, OAuth2, RBAC, TOTP 2FA, AES-256-GCM, TLS 1.2, X.509, bcrypt; JUnit, Testcontainers, pytest

Frontend & ML: React.js, Vite, Tailwind CSS, Zustand; CNN, XGBoost, SVM, LSTM/MLP, MediaPipe, OpenCV, scikit-learn, LLM/Ollama

PROJECTS

FinTwin.ai — AI-Powered Personal Finance Platform

2026

Solo-architected and shipped end to end | Java 21, Spring Boot, FastAPI, PostgreSQL, Redis, Kubernetes, Ollama

- **Architected** a production-grade 4-service distributed system — React + Vite frontend, Spring Boot (Java 21) core API, a separate identity service and a Python/FastAPI AI service over PostgreSQL with 14 Flyway migrations.
- **Built** bank-account aggregation via the Setu Account Aggregator plus budget, goal, investment and net-worth engines with real EMI/DTI computation and a water-fill savings-allocation algorithm.
- **Engineered** JWT auth with refresh-token rotation and theft detection, TOTP 2FA, Google OAuth, RBAC via a custom Spring Security permission evaluator, and AES-256-GCM field-level encryption of financial data.
- **Deployed** a self-hosted LLM copilot on Ollama (qwen2.5 / phi3) driven by an OpenAI-style tool-calling loop that fetches user data through a secured internal API instead of prompt-stuffing — zero paid-API cost.
- **Eliminated** N+1 query hotspots using Redis-backed distributed rate limiting, Caffeine caching, HikariCP tuning, paginated batch jobs replacing full table scans, and parallel market-data fetching.
- **Shipped** on Docker and Kubernetes (HPA 2 to 10 replicas, zero-downtime rolling deploys) with Prometheus/Grafana monitoring, 5 CI/CD workflows and ~180 automated tests (48 Testcontainers, 129 pytest).

Hybrid Cryptography over TLS

Java 17, JSSE/JCA

- Built a client-server channel on TLS 1.2 with ECDHE-RSA key exchange, AES-256-GCM and X.509 certificate authentication via Java KeyStore.

Real-Time Chat Platform

MERN, Socket.io

- Built one-to-one and group messaging with delivery-status tracking; JWT and bcrypt sessions, sub-50 ms delivery across concurrent sessions.

OPEN SOURCE CONTRIBUTIONS

- Elasticsearch (PR #142940) — merged documentation of the `http_schema` field in `AlibabaCloudSearchService` configuration.
- Apache Lucene (PR #15719) — merged JavaDoc improvements for the `org.apache.lucene.util` package; `TheAlgorithms/Java` (PR #7275) — merged `RemoveStars` and `ComplexNumberMultiply` algorithms.
- Opened 30+ pull requests across Elasticsearch and Lucene on flaky tests, resource leaks, ESQL planner bugs and lookup-join memory exhaustion.

EXPERIENCE

Google AI/ML Virtual Internship — Eduskills

01/2025 – 04/2025

- Implemented ML pipelines for classification and NLP using CNN and XGBoost across 50,000+ records, improving accuracy 15–20%.
- Designed RESTful APIs for secure inter-service data transmission, improving transfer efficiency by 30%.

Yoga Pose Detection Intern — Pune Institute of Computer Technology

02/2025 – 04/2025

- Developed a real-time posture analysis system using MediaPipe, CNN, XGBoost and SVM — 20% accuracy gain, 35% better error detection and 25% faster processing.
- Led a 3-member team across design, deployment, testing, performance tuning and UX; integrated secure communication and fault-tolerant response handling for live-streaming analytics.

PUBLICATIONS

- “Yoga Pose Detection and Correction Using Machine Learning Approaches” — 16th IEEE ICCNT 2025, IIT Indore; CNN, XGBoost and MediaPipe, 92% pose accuracy.
- “Machine Learning Techniques for Detecting DoS and DDoS Attacks: Methods, Attacks and Datasets” — Indian Journal of Technical Education (ISTE), 2026. MLP/LSTM intrusion detection; >99% accuracy on CIC-IDS benchmarks.

EDUCATION

B.E., Information Technology — Pune Institute of Computer Technology, Pune | CGPA: 8.94 / 10.0

11/2022 – 06/2026