

Muhammad Naveed

Principal Software Engineer • Java Backend • Fintech & Payments • AI

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SUMMARY

Principal Software Engineer with **5+ years** building secure, high-volume **Java backends** for banks and fintechs: mobile wallets, card tokenization, payment switching, remittance and banking integrations. I own systems end to end, from architecture and API security to production. Hands-on with **AI & ML** since university, from deep-learning and computer-vision models to today's LLM and RAG applications.

SKILLS

Backend	Java, Spring Boot, Quarkus, Jersey (JAX-RS), Microservices, REST & SOAP, Python (Flask)
Data	Oracle, PL/SQL, MySQL, query & stored-procedure performance tuning
Payments	Mastercard/Visa tokenization (NFC), POS & agency-banking switch APIs, Raast, 1LINK, USSD, remittance (IMT), KYC
Security	OAuth2, JWT / JWE, SSL/TLS, secure API design
DevOps	Docker, CI/CD, Git, AWS, Google Cloud, observability & production support
AI & ML	LLM APIs (Anthropic Claude), RAG, prompt engineering; TensorFlow, Keras, CNNs, OpenCV, NLP (spaCy), OCR

EXPERIENCE

Principal Software Engineer • Vaulsys 02/2024 – Present

- Delivered **NFC Tap & Pay** for **Rawbank** and **NayaPay** by integrating Mastercard/Visa tokenization with card-management systems (S2M, CSC, VCN).
- Integrated wallet payments with **Raast**, Pakistan's instant payment system, and the **1LINK** interbank switch.
- Built **international remittance (IMT) APIs** with partners including **MoneyGram**, **Citibank** and **Thunes**.
- Took the wallet beyond the app with **USSD** services, **POS & agency-banking switch APIs** and wallet-paid **e-ticketing**.
- Secured the platform with **OAuth2 / JWT / JWE**; delivered **ID-Wise KYC** onboarding and validation APIs.
- Engineered backends for agent, merchant and back-office portals and a **notification engine** for bulk and transactional messaging.
- Cut report generation time by **60%** by optimising the PL/SQL procedures and triggers behind transaction reporting.
- Lead development and deployment for critical wallet releases; senior escalation point for production issues, performance and observability.

Senior Software Engineer • Teresol 08/2023 – 02/2024

- Architected an automated in-house **IFRS9** system for **Bank AL Habib**, cutting manual financial processing time by **70%** (Java, Spring, Quarkus, Python Flask, Docker, Oracle).

Software Engineer I • Northstar Technologies (Sibisoft) 11/2022 – 08/2023

- Migrated legacy modules to a modern stack, increasing API throughput by **35%**; resolved live production and performance issues.

Software Engineer • Avanza Solutions 06/2021 – 11/2022

- Built APIs, proxy services and middleware integrations for banking clients including **Habib Bank Limited (HBL)** and a German bank; upgraded middleware releases for major banking projects.

Freelance Technical Consultant • International clients 2018 – Present

- AI, mobile and web solutions, rapid proofs-of-concept and custom ERPs for eCommerce, real estate and education.

PROJECTS (AI & ML)

- Speakify – Speaker Identification** (final-year project): deep-learning voice biometrics using CNNs and GMMs on MFCC spectrogram features, packaged as a web app (Python, Flask, React).
- RAG Support Chatbot**: answers questions from a company's own documents with source citations, built on the Claude API with a swappable retrieval layer (Python).
- Document Data Extraction**: OCR and NLP pipeline that pulls structured entities out of scanned documents (OpenCV, Tesseract, spaCy).
- Computer vision & NLP**: sign-language recognition (TensorFlow, Keras), mask detection (OpenCV) and an LSA-based text summarizer.

EDUCATION & CERTIFICATIONS

BS Computer Science • FAST – National University of Computer & Emerging Sciences, Karachi 2017 – 2021

Specializations: Machine Learning, Deep Learning, AWS Fundamentals, Project Management Principles & Practices, Project Management & Career Tools, SAS Programmer, Google IT Support. **Certificates:** Text Mining & Analytics (Illinois), The Data Scientist's Toolbox (Johns Hopkins), Managing Big Data with MySQL (Duke), Blockchain Technologies & Transacting on Blockchain (INSEAD), Google SEO (UC Davis).