HUSSAM HAROON

Software Engineering Student — Java & Backend Systems

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SUMMARY

2nd-year Software Engineering student at MUET (GPA: 3.62/4.0) who built a multi-threaded Java pipeline ingesting CERN LHC collision data at 5,000 events/sec with 94× lower database write latency. Hands-on with Spring Boot, PostgreSQL, Docker, and CI/CD. Looking for a remote Java backend internship to contribute to production systems.

EDUCATION

Mehran University of Engineering & Technology 2024 – 2028

B.E. Software Engineering | 2nd Year, Semester 4 | GPA: 3.62/4.0 | Jamshoro, Pakistan

Relevant Coursework: Object-Oriented Programming, Data Structures & Algorithms, Operating Systems, Software Design & Architecture, Computer Networking, Data Warehousing

TECHNICAL SKILLS

Languages: Java (primary), Python, C++

Backend: Spring Boot, Maven, JDBC, REST API Design

Databases: PostgreSQL, SQL (Joins, Batch Inserts, Indexes, Transactions)

DevOps & Tools: Docker, GitHub Actions CI/CD, Git

Concepts: Design Patterns, SOLID Principles, Multithreading

PROJECTS

LHC Event Processor — High-Throughput Particle Data Pipeline

Java, Spring Boot, PostgreSQL, Docker

- Architected a concurrent producer-consumer pipeline processing CERN LHC collision CSV data at 5,000 events/sec — a 558% throughput gain over single-threaded baseline via a bounded ArrayBlockingQueue (20k capacity) and streaming I/O.
- Engineered JDBC batch inserts that reduced database write latency by 94× vs. single-row mode; sustained sub-400 MB heap across 1M+ events.
- Implemented automated CI/CD pipelines featuring CodeQL security scanning, JaCoCo 80%+ test coverage, Checkstyle, SpotBugs, and Docker image publishing.

  Source: github.com/HussamHaroon/LHC-Event-Processor

FuelGuard — Fleet Fuel Theft Detection Dashboard

React 19, TypeScript, Firebase, Express, Workbox | Circuit Break Hackathon | 4-person team

- Collaborated in a 4-person team to develop a real-time PWA dashboard monitoring 6 vehicles simultaneously; implemented anomaly detection logic that cross-references tank-level drops against engine state, flagging theft and leak events instantly.
- Owned data visualisation layer: resolved Recharts full-tree re-render lag on 1-second data ticks by memoizing per-vehicle dataset slices and throttling update frequency — eliminating chart stutter across all 6 live feeds.

  Live: fuel-guard.vercel.app | Source: github.com/HussamHaroon/Fuel-Guard

Java Coffee Maker Simulation — Multi-threaded System

Java | University Coursework

- Engineered a multi-component simulation system with separate threads for brewing and temperature monitoring, using synchronized blocks for thread-safe state management during concurrent operations.
- Applied composition and aggregation patterns to model tightly and loosely coupled components (heating element, water tank), with clean separation of concerns across 8 classes.

  Source: github.com/HussamHaroon/Java-Coffee-Maker-Simulation

CERTIFICATIONS

Object-Oriented Programming in Java | IBM / Coursera

Design Patterns | U. of Alberta / Coursera

Intro to Networking & Cloud Computing | Microsoft / Coursera

Foundations of Cybersecurity | Google / Coursera

Google AI Essentials | Google / Coursera