Mohd Arshad

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EDUCATION

Babu Banarsi Das Northern India Institute Of Technology Lucknow, India
Bachelor of Technology in Information Technology (GPA: 7.6/10.0) *2022 – 2026*
Relevant Coursework: Data Structures & Algorithms, DBMS, OOPS (Java), OS, Computer Networks.

TECHNICAL SKILLS

Languages: Java, Python, SQL, JavaScript (ES6+)

Backend & Cloud: Spring Boot 3, Hibernate JPA, Microservices, Apache Kafka, Docker, Oracle Cloud (OCI)

Data Science & AI: Pandas, NumPy, Scikit-learn, Hugging Face Transformers, Streamlit, Plotly

Frontend & Web: React.js, TypeScript, HTML5, CSS3, Tailwind CSS

Databases: PostgreSQL, MongoDB, MySQL, Redis

Tools: Git/GitHub, Postman, Maven, JIRA

EXPERIENCE

Software Engineer Intern Mar 2025 – Present
AplyEase (Startup) *Remote*

- Engineered a **Multi-Agent AI System** (Tailor, Evaluate, Optimize) using **Google Gemini models**, which iteratively refines resumes to achieve **90+ ATS compatibility scores**.
- Acted as **Interim Team Lead**, orchestrating **client-employee allocations** and **mentoring new recruits** on the AI-driven delivery workflows, ensuring balanced workload distribution.
- Facilitated **client success & delivery** by conducting requirement gathering meetings and utilizing the **AI agents** to generate tailored resumes, streamlining the application process for **global clients** (USA).

RESEARCH & PUBLICATIONS

GeoSentinel: Computational Framework for Conflict Simulation Nov 2025 – Present

- **Objective:** Developed a **synthetic simulation engine** to model the interplay between kinetic warfare (physical attacks) and information warfare (narrative sentiment) using quantitative indices.
- **Technical Architecture:** Engineered a dual-pillar processing pipeline in **Python**, integrating **DistilBERT** transformers for sentiment quantification and **PCA (Principal Component Analysis)** for dynamic weight distribution between variables.
- **Validation:** Implemented **Granger Causality tests** to statistically validate lead-lag relationships between narrative spikes and kinetic escalation within simulated environments.

PROJECTS

StreamFlow - Distributed Notification Engine | *Java, Kafka, Redis, MongoDB, Zipkin*

- Designed a fault-tolerant, event-driven architecture using **Apache Kafka** to decouple producers/consumers, ensuring zero data loss during traffic spikes via **Dead Letter Queues (DLQ)**.
- Implemented **Write-Through Caching** with **Redis**, enabling sub-millisecond (5ms) latency for recent notification retrieval while offloading read traffic from the primary **MongoDB** database.
- Achieved system observability by integrating **Zipkin** for distributed tracing and **Testcontainers** for reliable integration testing against real infrastructure.

FlashTix - High Concurrency Ticketing System | *Java, Spring Boot, Redis, Lua Script*

- Engineered a high-performance booking engine capable of handling concurrent requests using **Redis Distributed Locks** and **Lua Scripts** to ensure atomic operations.
- Prevented "Double Booking" anomalies by implementing **Optimistic Locking** (@Version) at the database level as a fail-safe mechanism.
- Optimized system throughput by utilizing **HikariCP** for efficient connection pooling and monitored real-time metrics (Sold Out Errors, Latency) using **Prometheus & Grafana**.

Career Catalyst - AI Resume Optimizer | *Spring Boot, Python, Google Gemini, LaTeX*

- Built a hybrid architecture orchestrating a **Spring Boot** backend with **Python AI agents** via ProcessBuilder to perform semantic analysis on resumes using **Google Gemini Pro LLM**.
- Developed a dynamic document generation engine that compiles structured user data into pixel-perfect **LaTeX** templates, solving ATS parsing issues common with HTML-to-PDF converters.
- Designed a non-blocking API flow using reactive wrappers to handle long-running AI tasks asynchronously without blocking the main server threads.

ACHIEVEMENTS & CERTIFICATIONS

1st Rank – Code Master Competition: Outperformed **50+ participants** across two rounds by demonstrating algorithmic efficiency. Implemented memory-efficient **Bitwise XOR logic** for in-place swapping and debugged a complex **Array Rotation (K-shift)** algorithm, achieving the fastest submission with 100% accuracy.

Oracle Cloud Infrastructure (OCI) AI Generative AI Certified: Earned certifications in **AI Foundations** and **Generative AI**. Gained fundamental understanding of AI workloads, Large Language Models (LLMs), and Vector Databases, supporting the theoretical base for AI-driven development.