Mohd Arshad

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EDUCATION

Babu Banarsi Das Northern India Institute Of Technology　　　　　　　　　　Lucknow, India
Bachelor of Technology in Information Technology　　　　　　　　　　　　　　　*2022 – 2026*

- Cumulative GPA: 7.6 / 10.0
- **Relevant Coursework:** Data Structures & Algorithms, DBMS, Operating Systems, Computer Networks, OOPs.

EXPERIENCE

AplyEase　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Remote
Software Engineer Intern　　　　　　　　　　　　　　　　　　　　　　　*Mar 2025 – Present*

- Engineered a high-performance **Spring Boot & React** infrastructure with server-side caching, slashing API latency by **40%** and boosting user retention by **25%** through SEO-driven architectural upgrades.
- Built a scalable **microservices ecosystem** orchestrating **LLM inference engines** (Java & AI) to automate 3 core workflows, sustaining **500+ concurrent processes** with **zero latency degradation**.
- Developed an algorithmic parser for **1,000+ profiles**, elevating **ATS scores from 50% to 90%** and **doubling interview callbacks** via precision-based keyword mapping and automated data validation.

PROJECTS

GeoSentinel (Real-Time Geopolitical Risk AI) | *Python, Streamlit, DistilBERT, Scikit-learn*

- Engineered an **autonomous intelligence agent** that scrapes live global news feeds and triggers **Llama 3 (70B) inference** to synthesize unstructured text into structured **strategic military options** and real-time risk assessments.
- Architected a **decoupled producer-consumer system** with a background Python daemon for data ingestion and a **Streamlit Command Center** for visualization, utilizing **atomic JSON state management** to ensure zero-latency updates.
- Developed a **bi-modal risk engine** fusing **ACLED kinetic data** with AI-driven narrative signals, utilizing **PCA-based adaptive weighting** and **Granger Causality** ($p < 0.05$) to validate narrative hostility as a leading indicator of conflict.

FlashTix (High-Concurrency Booking System) | *Java, Spring Boot, Redis, PostgreSQL, JMeter*

- Engineered a high-frequency **event ticketing engine** capable of sustaining **5,000+ transactions/sec**, strictly enforcing **ACID properties** via **Optimistic Locking (JPA)** to eliminate race conditions during flash-sale surges.
- Optimized system latency by **70%** through a **Write-Through Redis caching strategy**, offloading read-heavy inventory checks and reducing database I/O overhead by **60%** under heavy concurrent loads.
- Fortified API stability using **Bucket4j distributed rate limiting** and circuit breakers, ensuring **99.99% service availability** validated through rigorous **Apache JMeter** stress testing simulating 100k users.

StreamFlow (Distributed Notification Engine) | *Spring Boot, Kafka, MongoDB, WebSockets*

- Architected an **event-driven microservice infrastructure** handling **1M+ events/hour**, decoupling producers via **Apache Kafka** partitions to guarantee **zero-blocking throughput** and seamless horizontal scalability.
- Implemented **Spring WebSockets (STOMP)** for **real-time bi-directional updates**, delivering sub-50ms latency alerts while asynchronously persisting massive audit logs in **MongoDB Sharded Clusters**.
- Designed a resilient **fault-tolerance mechanism** with **Exponential Backoff** and **Dead Letter Queues (DLQ)**, achieving **99.999% message delivery reliability** and automated recovery from downstream failures.

TECHNICAL SKILLS & CERTIFICATIONS

Languages: Java (Core & Advanced), Python, JavaScript (ES6+), SQL, HTML5, CSS3, LaTeX
Backend & Distributed Systems: Spring Boot 3, Microservices, Apache Kafka, WebSockets (STOMP), Redis (Pub/Sub & Caching), Hibernate/JPA, Bucket4j (Rate Limiting)
AI & Research Engineering: NLP (Hugging Face Transformers), DistilBERT, Scikit-learn, Pandas, NumPy, Streamlit, Time-Series Analysis (Holt-Winters), Statistical Modeling (Granger Causality)
Databases & Storage: PostgreSQL (Indexing/Locking), MongoDB (Sharding), MySQL, Redis
DevOps & Tools: Docker, AWS (EC2), Git/GitHub Actions, Apache JMeter (Load Testing), Postman, Maven
Core CS Concepts: System Design, Event-Driven Architecture, Concurrency Control (Optimistic/Pessimistic Locking), ACID Transactions, CAP Theorem, Distributed Tracing
Certifications: Oracle Cloud Infrastructure (OCI) AI Foundations, Backend Development (Udemy), Responsive Web Design (freeCodeCamp)

ACHIEVEMENTS

1st Rank – Code Master Competition: Outperformed **100+ participants** to secure top honors, designing an $O(n)$ time-complexity solution using **Bitwise XOR logic** that optimized data processing speed by **40%**.
Research Author – GeoSentinel: Authored a technical paper on *"Real-Time Geopolitical Risk Analysis,"* validating the **Granger Causal link** ($p < 0.05$) between narrative sentiment and kinetic conflict using AI-driven metrics[cite: 236].
Oracle Cloud AI Specialist: Earned **3 Enterprise Certifications** (GenAI, Vector Search, OCI) during the "Race to Certification 2025," demonstrating mastery in deploying LLMs on cloud infrastructure.