

# Laxmi Narayan Sharma

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## Education

**B.Tech in Information Technology (Minor in Economics), Indian Institute of Information Technology (IIIT), Allahabad** July 2022 - June 2026  
CGPA: 8.1/10 (as of 4th Year)  
Secured **99.4 percentile** in JEE Mains 2022 (Top 0.6% nationally)

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## Experience

**ASPR AGROVALUE (I) LIMITED — Software Development Engineer Intern** Dec 2024 – Feb 2025

- Designed and developed scalable backend services using **FastAPI**, implementing clean API architecture with modular routers, service layers, and dependency injection.
  - Built a **real-time chat system** using WebSockets, enabling persistent bi-directional communication with efficient connection handling and broadcast logic.
  - Implemented secure authentication using **JWT-based login flows** with OAuth2, token validation middleware, and user-specific data protection.
  - Developed relational DB models using **SQLAlchemy ORM** with one-to-many and many-to-many relationships (Users, ChatRooms, Messages) ensuring referential integrity.
  - Optimized database queries and connection lifecycle, improving API response times for high-frequency chat message ingestion.
  - Containerized the application with **Docker**, ensuring reproducible builds and smooth local + cloud deployment.
  - Wrote unit tests using **pytest + FastAPI TestClient**, covering authentication, message delivery, and room-level control.
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## Projects

**Intelligent Alert Escalation & Resolution System** [GitHub link - 🔗]

*Challenge:* Build a production-grade system capable of ingesting alerts, auto-escalating, auto-resolving, and providing real-time analytics.

*Outcome:*

- Developed a full-stack, event-driven system with **FastAPI, Celery workers, PostgreSQL, Redis**, and a **React (Vite)** dashboard.
- Implemented a **dynamic rule engine** (JSON-driven) enabling real-time logic like “3 strikes in 1 hour” without code changes.
- Built automated background workflows for **auto-resolution**, running via Celery Beat + Worker.
- Designed complete alert lifecycle management (Open → Escalated → Resolved) with full audit history.
- Added real-time analytics: **dashboard counters, trend-over-time charts, top offenders leaderboard**, all backed by Redis caching for high performance.
- Containerized all services with Docker Compose, enabling one-command deployment of backend, frontend, workers, DB, and monitoring stack.

**AI-Powered Multilingual Clinical Interview Chatbot** [GitHub link - 🔗]

*Challenge:* Limited access to clinical interviews due to language barriers.

*Outcome:*

- Architected multilingual NLP pipelines with Langchain and FAISS, spanning 5+ languages, to amplify clinical reach.
- Fused symptom extraction and automated reporting, securing 89% precision.

**Real-Time Meme Coin Aggregator Service** [GitHub link - 🔗]

*Challenge:* Consolidating volatile crypto data from multiple DEX sources in real time.

*Outcome:*

- Built a high-performance backend using **Node.js (TypeScript)**, integrating data streams from **DexScreener** and **Jupiter**.
  - Designed a **UnifiedToken** normalization layer to merge inconsistent DEX responses into a single reliable structure.
  - Implemented **Redis caching (30s TTL)** using the cache-aside pattern, cutting external API calls by 70%.
  - Enabled **real-time updates** via Socket.io, broadcasting refreshed token data every 15 seconds.
  - Added robust querying: **sorting, searching, filtering, and cursor-based pagination** for O(1) scalable fetches.
  - Added resiliency with **retry + exponential backoff** workers to prevent API failures during high-load periods.
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## Technical Skills

- Programming Languages:** Python, C++
  - AI & Machine Learning:** PyTorch, Scikit-learn, Langchain, Regression, Classification, PCA, Random Forest
  - Data Analysis & Visualization:** NumPy, Pandas
  - Tools & Technologies:** Docker, Git, MySQL
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## Related Coursework

Data Structures and Algorithms | Object Oriented Methodologies | Operating System | Database Management System | Machine Learning | Artificial Intelligence | Data Mining | Generative AI | Data Visualization | Cybersecurity

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## Volunteer Experience

**Overall Coordinator - Robita Club (Generative AI), IIIT Allahabad** Jan 2023 – June 2025

- Spearheaded a **10+** member team to execute **3+** AI initiatives with PyTorch, orchestrating hands-on workshops.