Maaz Ahmad

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EDUCATION

National University of Sciences and Technology (NUST) Islamabad, Pakistan
Bachelor of Engineering in Software Engineering; CGPA: 3.5 *Oct. 2023 – Expected Sep. 2027*

Punjab Group Of Colleges Sargodha, Pakistan
Intermediate (Pre-Engineering); Grade: A+ *Oct. 2021 – June 2023*

EXPERIENCE

Software Engineering Intern July 2025 – Aug. 2025
Planet Beyond *Islamabad, Pakistan*

- Developed full-stack features for the **Green Tourism** (Sustainability) and **Book Store** platforms using Spring Boot and React, implementing advanced search, inventory management, and admin monitoring modules.
- Engineered CI/CD pipelines using Jenkins, Docker, and Kubernetes to automate build/test workflows, significantly reducing manual deployment errors.
- Implemented secure OAuth2 and JWT-based authentication systems to ensure robust session management and role-based access control (RBAC) across web services.
- Expanded the platform's reach by building production-ready React Native features, aligning the mobile user experience with the core web application.
- Optimized backend performance through caching strategies and API polling, delivering fully documented endpoints via Swagger.

PROJECTS

Smart Air Quality Monitoring System | *Java Spring Boot, React, PostgreSQL, IoT (ESP32)* Sept. - Dec 2025

- Developed a full-stack environmental monitoring platform providing real-time Air Quality Index (AQI) tracking and automated hazard alerts for major cities.
- Designed and integrated a hardware prototype using **ESP32** and sensors (MQ4, MQ7, MQ135, DHT11), transmitting real-time data to the mobile app via an **MQTT broker**.
- Implemented a RAG-based AI chatbot using Groq (Llama-3.1) to generate context-aware health advice, alongside a background polling engine for continuous data synchronization and automated email notifications via SMTP.
- Built an interactive dashboard with React & Leaflet for geospatial visualization of pollution hotspots, backed by a secure Spring Boot REST API handling user authentication (JWT) and persistent data storage.

Agentic Workflow Automation Platform | *Python, FastAPI, React, Ollama, React Flow* Sept. 2025

- Developed a local-first AI orchestration platform enabling users to visually design autonomous, multi-step agentic workflows using Directed Acyclic Graphs (DAGs).
- Engineered a custom ReAct execution loop with Llama 3.1 to enable self-correcting agent behaviors and dynamic context propagation.
- Integrated tool-use capabilities (Web Search, File I/O) with a real-time streaming backend via NDJSON.

Pharma Document RAG Chatbot | *Python, FAISS, Sentence-Transformers, Groq API* Sept. 2025

- Engineered a Retrieval-Augmented Generation (RAG) system to process pharmaceutical PDFs using semantic search and vector indexing (FAISS).
- Integrated Groq LLM to generate context-grounded answers with retrieved-chunk citations, ensuring accuracy and domain relevance.
- Developed a modular ingestion pipeline for embedding and retrieval featuring an interactive Gradio interface.

TECHNICAL SKILLS

Languages: Java, Python, C++, JavaScript (ES6), HTML/CSS, SQL (MySQL, PostgreSQL)
Frameworks/Libraries: Spring Boot, React, Node.js, LangChain, Pandas, NumPy, React Flow
DevOps & Tools: Docker, Kubernetes, Jenkins, AWS, Git/GitHub, Linux, OAuth2, Swagger, Ollama
IoT & Hardware: ESP32, MQTT Broker, Sensors (MQ Series, DHT11)

CERTIFICATIONS

NCEAC - HEC & ULEF: Generative AI Application Developer Certificate (Dec 2025)
DeepLearning.AI: Machine Learning Specialization, Generative AI for Everyone, Neural Networks & Deep Learning
IBM: Developing Front-End Apps with React, Git and GitHub Fundamentals
Learn Quest: Linux Fundamentals