AYESHA ZAFAR

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Software Engineer

BSc Software Engineering student with a strong passion for AI, machine learning, and data-driven solutions. Experienced in building interactive AI applications, predictive models, and dashboards using Python, Streamlit, and LLMs. NASA Space Apps Challenge participant with hands-on project experience in AI and data analytics. Driven to create innovative, user-centered solutions and turn complex data into actionable insights.

EDUCATION

Bachelors of Science in Software Engineering   CGPA **3.71/4.0**

October 2022 - August 2026

University of Management and Technology (UMT), Lahore, Pakistan

AWARDS & ACHIEVEMENTS

Merit-Based Scholarship (80% Tuition Fee Waiver) – Awarded by University of Management & Technology for outstanding academic performance.

Rector's Merit Award — Fall 2024 -Awarded for achieving a 4.0/4.0 GPA with a full course load and exceptional academic standing.

WORK EXPERIENCE

Data Science Intern at 10pearls   CERTIFICATE   *June 2025-August 2025*

- Independently managed an end-to-end data science project, applying problem-solving and analytical skills to a real-world scenario. Prepared and delivered presentations of the project to stakeholders, explaining methodology, insights, and results effectively.
- Gained experience in handling datasets, performing analysis, and documenting processes professionally. Developed communication, project management, and critical thinking skills in a professional environment.
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INTERNATIONAL HACKATHONS

NASA International Space Apps Challenge 2025 — Participant   CERTIFICATE

- **Challenge**: Build a Space Biology Knowledge Engine
- **Achievement:** Galactic Problem Solver Certificate
- **Role:** Collaborated on analyzing NASA's open space biology datasets using AI.

PROJECTS

AQI-Prediction — Multan (ML + Streamlit + Explainability)   GITHUB   LIVE DEMO

- Developed a 3-day AQI forecasting system for Multan using Random Forest, Linear Regression, and Stacked Ensemble models.
- Engineered features from past 30-day PM2.5 data and future weather forecasts from OpenWeather API.
- Added Explainable AI with SHAP to show global and per-day feature contributions.
- Designed an interactive EDA dashboard showing trends, correlations, distributions, and AQI categories.
- Containerized the app using Podman and deployed serverlessly on Streamlit Cloud.
- Implemented CI/CD with GitHub Actions for automated building, testing, container pushing, and deployment.
- **Tech stack**: Streamlit, scikit-learn, pandas, numpy, SHAP, OpenWeather API, Podman, GitHub Actions.

BioOrbit — NASA Space Biology Knowledge Explorer (AI + Streamlit)   GITHUB   LIVE DEMO

- Developed an AI-powered explorer for NASA's 608 Space Biology research studies using Streamlit.
- Implemented RAG-style search, keyword filtering, and AI-generated article summaries for faster insights.
- Designed a responsive UI with interactive cards and instant cached results for repeated queries.. **Tech stack**: Streamlit, Python, Transformers, pandas, BeautifulSoup, GitHub Actions

AI Diet Planner (Groq LLM + Streamlit + Hugging Face)   HuggingFace Repo   LIVE DEMO

- Developed an AI-powered personalized diet planner using Groq LLM, Streamlit, and Python. Generates 1–7 day meal plans, macronutrient breakdowns, micronutrient estimates, portion sizes, and Pakistani-style recipes.
- Includes grocery list extraction, daily calorie calculation (BMR + activity level), and safe nutrition constraints.
- Added hydration tracker, weight progress chart, and downloadable PDF/TXT diet plans.
- Implemented modern UI with custom CSS and deployed on Hugging Face Spaces. **Tech stack**: Streamlit, Groq API, Python, dotenv, FPDF, Matplotlib.

Ayesha's Career Chatbot (RAG + Groq LLM + Streamlit + ChromaDB)   GITHUB   LIVE DEMO

- Developed an AI-powered chatbot that answers questions using information retrieved directly from my CV.
- Implemented a RAG pipeline with PDF parsing, text chunking, embeddings, and vector search using ChromaDB.
- Integrated Groq Llama-3.3-70B through LangChain for fast, accurate response generation.
- Designed an interactive UI in Streamlit with chat bubbles, avatars, background animation, and memory-based conversations.
- **Tech stack:** Python, Streamlit, LangChain, Groq Llama-3, ChromaDB, HuggingFace Embeddings

TECHNICAL SKILLS

- **Machine Learning & Data Science**: scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, SHAP (Model Explainability)
- **Generative AI**:LLMs (Groq, LLaMA-3), RAG, LangChain, ChromaDB, Prompt Engineering, Embeddings, Streamlit AI Apps **Programming**
- **Languages:**Python, Java, C++, C, MATLAB, Bash
- **Web Development**:HTML5, CSS3, JavaScript, Bootstrap
- **Databases & Backend Tools:**MySQL, XAMPP (Apache, MySQL)
- **Cloud & Deployment:** Streamlit Cloud, Hugging Face Spaces
- **Version Control**:Git, GitHub
- **DevOps & Containers**:Docker (Basic)
- **Operating Systems:** Windows, Linux (Ubuntu – CLI & Virtual Machine)
- **Data Platforms Kaggle** :(Datasets, Notebooks, Competitions)
- **Development Tools**: VS Code, PyCharm, Jupyter Notebook, IntelliJ IDEA,Google Colab **Productivity Tools** :Microsoft Word, Excel, PowerPoint

CERTIFICATIONS & TRAINING

Business Communication and AI for Professionals (Course) – LUMS (LUMSx)   CERTIFCAT   E

- Professional certification in business communication and AI applications
- Partnership program with PepsiCo, Roshan Kal Academy, and ilmX
- Taught by LUMS faculty and PepsiCo executives

UI/UX Design Using Generative AI (Workshop)

- Learned AI-assisted design workflows, rapid prototyping, and user-centered interface design

Generative AI Application Developer (NCEAC–HEC)

Training in LLMs, prompt engineering, and AI app development | Top Performer   CERTIFCAT   E

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VOLUNTEERING EXPERIENCE

Volunteer – Grand Iftar Drive   University of Management and Technology (UMT) [**CERTIFCATE**](#) Awarded a Certificate of
- Appreciation for active participation in the Grand Iftar Drive organized by SDI. Contributed to event coordination, teamwork,
- and community engagement initiatives