Muhammad Usama

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Summary

AI/ML Engineer & Full-Stack Developer skilled in **Generative AI, LLMs, RAG, and deep learning**, with expertise in building **production-ready AI systems and scalable web applications**. Experienced in **cloud, MLOps, and data-driven product development**, delivering solutions that optimize performance and create business impact.

Technical Skills

Languages & ML Stack: Python, SQL, PyTorch, TensorFlow, Transformers, LLMs, RAG, LangChain, LlamaIndex

Full Stack & Data Engineering: ReactJS, Next.js, Node.js, NestJS, Express.js, Azure, AWS, Apache Airflow, PySpark, MongoDB, PostgreSQL, MySQL, MS SQL, Supabase, Firebase, Vector Databases (FAISS, Pinecone, Weaviate),Neo4j

DevOps & Tools: Git, Docker, Bash, Power BI, Databricks, Streamlit, Gradio, FastAPI

AI Specializations: Generative AI, NLP, Computer Vision, Deep Learning, Anomaly Detection, Time Series Modeling

Professional Experience

Lean Automation | AI Engineer   **Feb 2024 - Present**

- Built end-to-end AI systems using RAG pipelines, LLM fine-tuning, and advanced deep learning architectures.
- Developed and deployed full-stack AI applications with real-time monitoring, predictive modeling, and automation.
- Delivered production-ready Generative AI solutions (LLMs, ANN/RNN, VAE-LSTM) integrated with modern web technologies and APIs.
- Led predictive modeling efforts to forecast FeO concentration in iron ore pellets using Decision Trees and Linear Regression; enhanced process control accuracy using PCA-based feature engineering
- Engineered real-time monitoring pipelines and deployed ML models for failure prediction in manufacturing plants; improved maintenance planning and response times by 40%
- Fine-tuned the LLaMA 3.2 model to develop Lean's Co-Pilot, an AI assistant offering context-aware code suggestions and automation; integrated with React frontend and RESTful APIs

Lean Automation | Full Stack Engineer   **Jan 2023 - Jan 2024**

- Built and deployed full-stack applications integrating React, Next.js, Node.js, NestJS, and Express.js with ML-powered backends.
- Developed interactive analytics platforms connected to SQL and NoSQL databases (MS SQL, MySQL, PostgreSQL, Supabase, Firebase, MongoDB) for real-time data pipelines.
- Automated data reporting and visualization systems with SQL, Power BI, and API integrations, enabling AI-driven decision-making.

GDSC – Google | Lead Data Analyst   **Jan 2022 - Dec 2022**

- Led data strategy and analytics for GDSC, driving initiatives that improved community engagement and event participation
- Collected, cleaned, and analyzed student activity and event data to uncover actionable insights
- Created visual dashboards and reports to guide strategic decision-making for community outreach and technical workshops

Education

B.S. Computer Science   GPA: 3.56/4.0

Comsats University Islamabad

Certifications

- Machine Leaning Specialization
- AI For Everyone
- SQL Advance

- Google Data Analytics Professional Certificate
- Python Certification
- Data Science