Muhammad Ghulam Jillani

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Professional Summary

Senior Data Scientist and Machine Learning Engineer specializing in Generative AI, LLMs, and Autonomous AI Systems, with a proven record of transforming SaaS and PaaS platforms through innovative enterprise AI and agentic AI solutions. Expertise in optimizing workflows, streamlining data pipelines, and building scalable AI architectures to solve complex business challenges. Recognized as a 24x LinkedIn Top Voice, Top 100 Global Kaggle Master, and KaggleX BIPOC Mentor, contributing to the NVIDIA Developer Program, Google Developer Group, and AWS AI Community. Demonstrated leadership in AI-driven product innovation, LLMOps strategies, and multimodal AI, delivering impactful results with cutting-edge technologies across industries.

Technical Skills

Programming & Development:
- **Languages & Frameworks:** Python, Scikit-Learn, TensorFlow, Keras, PyTorch, NLTK, Hugging Face Transformers, OpenCV, FastAPI, Flask, Streamlit.
- **Tools & Libraries:** Pandas, NumPy, Matplotlib, Plotly, Seaborn, PySpark, OpenAI API, REST APIs, GraphQL, Neo4j, Docker, GitHub Actions, CI/CD Pipelines.
- **Database Systems:** SQL, NoSQL, Vector Databases (Pinecone, Faiss, Chroma DB).

Data Science & AI:
- **Core Skills:** Machine Learning, Deep Learning, Generative AI, LLMs (GPT, Gemini, LLaMA, Falcon, DeepSeek), Natural Language Processing (NLP), Time Series Analysis, Model Deployment, Prompt Engineering.
- **Frameworks & Tools:** LangChain, RAG (Retrieval-Augmented Generation), LlamaIndex, LangGraph, LangGraph, PhiData, LangServer, AutoGen, LangSmith, AutoML.
- **Applications:** AI-Driven Process Automation, Predictive Modeling, Statistical Analysis, Big Data Technologies, Data Visualization.

Cloud & MLOps:
- **Platforms:** AWS (SageMaker, Lambda, Bedrock, EC2), Azure (Azure ML, Azure AI, App Services), GCP (Vertex AI, Cloud Functions), Heroku.
- **Practices:** MLOps, LLMOps, AIOps, Cloud Machine Learning, MLflow, Orchestration Frameworks.

Management & Operations:
- Agile Methodologies, Microservices Architecture, Business Analysis, Product Management, Team Leadership, Stakeholder Management, Business Intelligence.

Communication & Collaboration:
- Strong in technical writing, effective communication, stakeholder engagement, and team collaboration, fostering a productive and inclusive environment.

Languages:
- Fluent in English and Urdu.

Experience

Senior Data Scientist & Machine Learning Software Engineer (Generative AI) — **PURELOGICS**
New York, United States — 12/2024 – Currently

- **Led AI-Driven MVPs & Enterprise Deployments:** Spearheaded high-impact MVP projects, including an Enterprise-Grade RAG Pipeline for BI, a Health Guard AI Pipeline for Remote Patient Monitoring, a GPT-4o-Based Conversational AI Chatbot, and an Agentic AI System for Legal & Financial Advisory, leveraging Generative AI, RAG, and Autonomous AI Agents.
- **Scalable AI & Cloud Solutions:** Designed, deployed, and optimized end-to-end AI/ML pipelines on AWS (SageMaker, Bedrock, Lambda) and GCP (Vertex AI, BigQuery, Cloud Run), ensuring high availability, cost efficiency, and real-time insights.
- **Advanced Multi-Agentic AI Architectures:** Engineered multi-agent systems with LangChain, LangGraph, PhiData, Pinecone, and Graph DBs to enhance automation, decision-making, and autonomous AI-driven workflows across domains.
- **Leadership & Strategic Execution:** Led cross-functional teams, aligning AI strategies with business objectives, optimizing LLMOps & MLOps pipelines, and ensuring seamless model lifecycle management from development to production.
- **Mentorship & Innovation:** Mentored AI/ML teams, fostering expertise in LLM fine-tuning, Retrieval-Augmented Generation (RAG), and AI-powered automation, while driving continuous innovation in GenAI applications.
- **Key Achievements:** Successfully delivered scalable, enterprise-grade AI solutions, exceeding performance benchmarks, accelerating deployment cycles, and enhancing efficiency, automation, and business intelligence.

Senior Data Scientist Machine Learning & Gen AI Engineer (Volunteer) — **NVIDIA**
California, United States — 08/2024 – Currently

- **NVIDIA & Z by HP Developer Programs:** Active member contributing to GPU-optimized applications and testing enterprise-level Generative AI solutions on NVIDIA AI Studio and Z by HP platforms.
- **LLM Contributions:** Developed and tested open-source and enterprise-level LLMs, including vLLMs, for Generative AI domains.
- **Specialized SDK Integration:** Leveraged cutting-edge NVIDIA tools and SDKs to build and optimize AI solutions.
- **Collaborative Expertise:** Worked closely with NVIDIA and Z by HP teams to validate and enhance AI tools and frameworks.
- **Community Contributions:** Actively contributed to open-source LLM projects, driving innovation in Generative AI and large-scale deployments.

Senior Data Scientist & Machine Learning Engineer — **BLOCBELT**
Maryland, United States — 12/2022 – 12/2024

- **Strategic AI Leadership & Team Management:** Led the development of AI-driven SaaS and PaaS solutions, managing a team of three, with a focus on Big Data, Data Analysis, and AI Engineering. This initiative enhanced operational efficiency, resulting in $2M in cost savings for clients.
- **Sales Forecasting & Market Analysis:** Improved sales forecasting accuracy by 80-90% through data analysis across 120+ market entities, leading to actionable growth strategies and enhanced sales workflows.
- **E-Commerce Platform Innovation & Sales Growth:** Successfully launched a client-focused personalized fashion e-commerce platform featuring an advanced recommendation engine. This initiative led to an 80% increase in sales and a 200% surge in online orders, surpassing project goals by three months ahead of schedule.

- **Operational Excellence & Cost Reduction:** Streamlined data processing and optimized workflows using OpenCV, leading to significant cost savings and improved efficiency.
- **Data-Driven Strategy & Revenue Growth:** Led the development of statistical models and predictive analytics, resulting in an 18% increase in company revenue. Enhanced data visibility by 45% with strategic dashboards, fostering cross-functional collaboration.
- **AI Integration & Enhanced Digital Sales Experience:** Integrated AI into SaaS and PaaS offerings, focusing on distributed systems and conducting over 25 A/B tests to refine the e-commerce experience, driving technological advancements.

AI Data Scientist Kaggle Master Mentor *(Part-Time, 20 hours/week)* **GOOGLE-KAGGLE**
San Francisco, USA 12/2022 – 11/2024

- **Championed** mentorship initiatives through the Kaggle-X BIPOC Mentorship Program, dedicating 20 hours weekly to guiding aspiring data scientists in technical skill development and community contributions.
- **Secured** a position among the Top 100 Kaggle contributors globally, recognized as the first Pakistani mentor in the program.
- **Led** a team of four mentees, enhancing their skills in data science, machine learning, and real-world problem-solving.
- **Drove** innovation by collaborating on high-impact AI projects and actively contributing to the global data science community.

Data Scientist **Crypto-Express**
Thailand 01/2022 - 12/2022

- Developed an Anti-spoofing Face-App, enhancing digital identity security and reducing identity fraud by 70%.
- Applied AI and ML techniques to solve industry-critical issues, improving efficiency by 25% and reducing operational costs by 15%.
- Engineered predictive models and provided actionable insights, leading to a 20% revenue increase through data-driven decision-making.
- Advanced expertise in EDA, Machine Learning, and Deep Learning, saving over 250+ hours of manual analysis annually.
- Successfully deployed AI/ML projects remotely, adapting to dynamic conditions and gaining significant experience in the AI/ML field.

Artificial Intelligence Engineer **Pakistan Freelancing Training Center**
Lahore, Pakistan 01/2021 - 12/2021

- Led AI and Data Science training sessions, preparing students to tackle real-world challenges.
- Designed and deployed models using TensorFlow and Keras, improving system efficiency and accuracy.
- Bridged the gap between academic learning and industry skills, driving practical applications of AI technologies.
- Automated repetitive data tasks using Python, significantly reducing manual labor and error rates.
- Engaged in ongoing AI research to apply cutting-edge methodologies to projects.

Projects

- **Health Assistance Application (LLM):** Architected a comprehensive **Health Assistance Application** leveraging the Gemini 1.5 Pro LLM model, RAG, and LangChain. This solution supports doctors and patients by providing detailed medical information, symptom diagnosis, treatment suggestio ns, and preventive healthcare advice. The integration of generative AI ensures accurate and personalized health recommendations, significantly enhancing patient care and medical consultations.
- **AI-Powered Blog Generator (LLM):** Developed an AI-powered content generator leveraging Llama 3.1 8B, AWS Bedrock, and RAG for real-time fine-tuning on dynamic datasets. Integrated with Streamlit for a seamless user interface, the system automated blog creation, editing, and publishing, increasing efficiency in content marketing and engagement for enterprises.
- **Conversational AI Chatbot for Customer Support (GPT-4o, LangChain, Bedrock):** Designed and deployed an enterprise-grade chatbot powered by GPT-4o, integrated with LangChain and AWS Bedrock. Implemented advanced NLP techniques such as intent recognition and dynamic response generation, reducing customer query resolution times by 40% and improving customer satisfaction.
- **AutoML-Studio:** Built a low-code/no-code machine learning platform enabling rapid development and deployment of predictive models. Incorporated MLflow for tracking, XAI (SHAP) for explainability, and data drift detection to ensure model reliability. Deployed with FastAPI and Streamlit, the platform supports classification, regression, time-series forecasting and clustering, empowering non-technical users to build robust AI solutions.
- **DocuWiz AI (LLM):** Engineered a document intelligence tool leveraging advanced NLP models like BART and DistilBERT for text extraction, summarization, and sentiment analysis. Integrated RAG and LLMs to enable detailed insights and visualizations for PDF and DOCX analysis. Deployed as an interactive Streamlit application and FastAPI, reducing document processing time by 60% and enhancing productivity in legal and academic domains.
- **Harvestify-AI-Powered-Plant-Health-Assistant:** Designed and implemented an AI-driven application leveraging Azure AI Studio and Azure App Services to diagnose plant leaf diseases through real-time image analysis. The system integrates deep learning models to recommend crops and fertilizer solutions tailored to soil and weather conditions, enhancing agricultural decision-making. Deployed on Microsoft Azure, the solution reduced disease detection time by 70%, improved crop yield predictions by 30%, and empowered farmers with actionable insights to optimize productivity and sustainability.
- **Intelligent Document Summarization Tool (LLM):** Developed an Intelligent Document Summarization **Tool** using transformer-based LLM models like Pegasus to generate concise summaries from lengthy documents while preserving key information. Deployed with FastAPI and Streamlit APP for real-time interaction, supporting formats like PDF and DOCX, and leveraging semantic analysis for relevance extraction. Reduced manual document review time by 60%, boosting productivity in legal and academic workflows.
- **Customer Satisfaction Prediction System (MLOps):** Created a predictive analytics system using ZenML and MLflow within an MLOps framework to achieve 93% accuracy in forecasting customer satisfaction. Streamlined pipeline management and deployed models efficiently, providing actionable insights that improved business decision-making and customer retention strategies.

Education

Bachelor in Computer Science (Major: Artificial Intelligence and Computer Science**)** **Institute of Management Sciences**

CERTIFICATIONS

- **IBM Machine Learning Specialization Professional Certificate,** IBM.
- **Microsoft Azure AI Fundamentals AI-900 Exam Prep Specialization,** Microsoft.
- **Machine Learning Engineering for Production (MLOps),** DeepLearning.ai.
- **Generative Adversarial Networks (GANs) Specialization,** DeepLearning.ai.
- **Preparing for Google Cloud Certification: Machine Learning Engineer,** Google.
- **AWS Cloud Solutions Architect Professional Certificate,** Amazon Web Services.
- **Practical Data Science on the AWS Cloud Specialization**, DeepLearning.ai.
- **MLOps | Machine Learning Operations Specialization,** Duke University.
- **Advanced Machine Learning on Google Cloud Specialization,** Google Cloud.
- **Google Advanced Data Analytics Professional Certificate,** Google.
- **Deep Learning Specialization,** DeepLearning.ai.
- **Prompt Engineering for ChatGPT,** Vanderbilt University.
- **AI Product Management,** Duke University.
- **IBM Generative AI Product Managers,** IBM.
- **IBM AI Product Manager,** IBM**.**
- **Google Project Management: Professional Certificate,** Google.
- **Machine Learning Specialization,** DeepLearning.AI.
- **Google Business Intelligence Professional Certificate,** Google.
- **Large Language Model Operations (LLMOps),** Duke University.