Fazeel Asghar

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Professional Summary

AI Engineer and Data Scientist with extensive experience in **Computer Vision, Generative AI, Large Language Models (LLMs), MLOps, and IoT**. Proficient in **data preprocessing, advanced Exploratory Data Analysis (EDA), and professional data visualization**, with a strong foundation in **machine learning and deep learning**—ranging from regression and classification to object detection and generative AI. Skilled in **fine-tuning LLMs (Hugging Face), Retrieval-Augmented Generation (RAG), and text classification to text generation**. Hands-on experience in **image generation with Stable Diffusion** and **building production-ready AI solutions**, deploying models efficiently with MLOps best practices. Passionate about **integrating AI into SaaS, PaaS, healthcare, autonomous systems, and predictive analytics**, driving real-world impact. Adept at **optimizing AI workflows, developing scalable architectures, and bridging AI with IoT** for intelligent automation. Active in **AI research and open-source contributions**, continuously pushing the boundaries of innovation.

Technical Skills

Programming & Development:

- **Languages & Frameworks:** Python, Html, CSS, Scikit-Learn, FastAPI, Flask, Django, Streamlit, OpenCV, QtPy5, TensorFlow, Keras, Hugging Face Transformers.
- **Tools & Libraries:** Qtpy, Pandas, NumPy, Matplotlib, Seaborn, Folium, OpenAI API, REST APIs, Docker, GitHub Actions, CI/CD Pipelines.
- **Database Systems:** SQL, NoSQL, Vector Databases (XAMP, MySQL, MongoDB Atlas, ChromaDB, Pinecone).

Data Science & AI:

- **Core Skills:** Machine Learning, Deep Learning, Natural Language Processing (NLP), Time Series Analysis, CNN, RNN, Object Detection, YOLO, Model Deployment, Prompt Engineering.
- **Frameworks & Tools:** Numpy, Pandas, Scitkit-Learn, Matplotlib, Tensorflow, Huggingface, LangChain, Fine-Tuning, RAG (Retrieval-Augmented Generation), Databricks.
- **Applications:** AI-Driven Process Automation, Predictive Modeling, Statistical Analysis, Data Visualization, Machine Learning Pipelines.

Cloud & MLOps:

- **Platforms:** AWS (EC2, ECR, S3, IAM, IVS).
- **Practices:** MLOps, AIOps, Cloud Machine Learning, MLflow, Docker, CI/CD, DVC, Kubernetes.

Management & Operations:

- Agile Methodologies, Microservices Architecture, Business Analysis, Team Leadership, Business Intelligence.

Languages:

- Fluent in English and Urdu.

Experience

Junior AI Engineer — Safe-RH Lab
Bahawalpur, Pakistan   06/2022 – 06/2024

- **Contributed to the Development of SAFE-RH Rural Health Monitoring System:** Actively participated in the international Safe-RH project, collaborating with universities from Pakistan, University of the West of Scotland, and University de Lorraine (France) to develop a Rural Health Monitoring System. This system allows real-time collection of vital signs, sending them to doctors for immediate diagnosis and prescription.
- **Integrated IoT & Machine Learning for Remote Health Monitoring:** Contributed to the design and deployment of an IoT-based health monitoring system that enables real-time data collection and transmission to healthcare providers for timely intervention.
- **Optimized Data Pipelines for Real-Time Health Insights:** Worked on optimizing the data flow between IoT sensors and cloud platforms, ensuring real-time transmission of vital signs to doctors, enhancing efficiency in remote healthcare management.
- **Cross-Functional Collaboration & Research Execution:** Collaborated with multidisciplinary teams from multiple universities, aligning research goals with technical implementation, ensuring seamless integration of AI-driven systems in healthcare environments.
- **Mentorship & Knowledge Sharing:** Supported team members in AI, ML, and IoT, providing mentorship and fostering innovation within the team, driving advancements in remote health monitoring.
- **Key Achievements:** Successfully contributed to the development of a scalable, real-time Rural Health Monitoring System, enhancing remote healthcare delivery and patient care.

Research Internee — UWS
Scotland, United Kingdom   06/2024 – 08/2024

- **Proposed and Developed a Smart Wheelchair with Obstacle Detection & Vital Signs Monitoring:** Initiated research under the Safe-RH Mobility Program, proposing an AI-powered smart wheelchair for continuous patient monitoring and automated alerts for doctors. The project was accepted as part of the program.
- **Engineered Obstacle Detection & Avoidance System:** Developed a functional prototype of a smart wheelchair with real-time object detection and obstacle avoidance using Arduino, Ultrasonic Sensors, Infrared Sensors, and a Camera, ensuring safe navigation.
- **Explored IoT-Enabled Vital Signs Monitoring:** Designed a framework to integrate IoT-based health monitoring, aiming to track critical patient vitals and send real-time notifications to doctors for proactive healthcare intervention.
- **Optimized Embedded Systems for Autonomous Navigation:** Implemented efficient sensor fusion and data processing techniques to enhance wheelchair movement and environmental awareness.
- **Cross-Institutional Research Collaboration:** Worked with researchers from UWS and other partner universities, aligning AI and IoT applications with assistive healthcare technology advancements.
- **Key Achievements:** Successfully developed a functional small-scale smart wheelchair prototype capable of real-time obstacle detection and autonomous movement, laying the foundation for future integration of vital signs monitoring in assistive mobility solutions.

Education

Bachelors in Information Technology (Major: Artificial Intelligence and CS**)**   Islamia University of Bahawalpur

Certifications

- IBM Machine Learning with Python Certificate, IBM.
- Data Visualization with Python, IBM.
- Machine Learning Specialization, DeepLearning.ai.
- Research Internee, University of the West of Scotland