

Maaz Alam

Data Scientist - ML/DL Engineer

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- 5 years of experience in Machine Learning and AI, with a diverse skill set for tackling a wide range of projects.
- Extensively experienced in traditional machine learning algorithms, including predictive modeling, time series analysis, regression, classification, clustering etc.
- Developed chatbots using RAG architectures powered by GPT-4 api and open source hugging face models, featuring dynamic memorization, zero-shot learning, and advanced NLP techniques for personalized and engaging interactions.
- Experienced in deep learning with expertise in Generative AI (face synthesis), facial recognition models (VGGFace, ArcFace, FaceNet), and advanced architectures such as LSTMs and Siamese Networks, applied across diverse NLP and computer vision projects.
- Strong command of Natural Language Processing (NLP), demonstrated by leading a groundbreaking NLP project and fine-tuning state-of-the-art 'whisper' models.
- Proficient with a track record of building automated machine learning and deep learning model pipelines for data pre-processing, inference optimization, containerization, and deployment.
- Hands-on experience with key machine learning libraries and frameworks, including Keras, TensorFlow, NumPy, Pandas, Scikit-Learn, and more.
- Extensive expertise in using tools like Jupiter, Git, Linux, PyCharm, Docker, GitHub, and VSCode for efficient code development and management.
- Proficient in Python, C++/C, and Flutter for cross-platform development

Skills

Domain	Utilities
Programming Languages	Python, C++, C, MATLAB
ML/DL Stack	Azure Machine Learning Studio, Amazon SageMaker, Prompt Engineering, Keras, TensorFlow, NumPy, Pandas, Scikit-Learn, Matplotlib
Tools	PySpark, Git, PyCharm, Anaconda, MS Excel, Jupyter Lab, Jupyter Notebooks, GitHub, Visual Studio Code, Linux
Cloud	AWS, Azure

EXPERIENCE

Lead Data Scientist | Horizon Tech Services

<https://www.horizon.com.pk/>

Oct 2023-Present

- Leading a Generative AI project implementing Stable Diffusion models for text-to-image generation, enhancing the fidelity and creativity of visual outputs based on textual prompts.
- Fine-tuned large language models (LLMs) with domain-specific knowledge bases to align responses with client-specific areas of interest, leveraging advanced Generative AI techniques, including Retrieval-Augmented Generation (RAG).
- Developed an advanced WhatsApp-based chatbot leveraging GPT-4 and generative AI, designed to act as a friendly companion. Utilized Firebase for managing chat history and WhatsApp webhooks for seamless integration.
- Leveraged advanced Computer Vision (CV) techniques for image processing, object detection, image recognition, and remote sensing. Led supervised fine-tuning of YOLO model to enhance task-specific performance and applicability.
- Effectively communicated complex findings to diverse stakeholders, from executives to non-technical teams. Skillfully utilized storytelling techniques and visualizations to convey insights, ensuring actionable recommendations were clearly understood and embraced.

Machine Learning Engineer at PinVan Technologies

Sep 2021-Sep 2023

- **Lead** a high-impact project for one of Pakistan largest corporations, leveraging advanced Natural Language Processing (NLP) techniques to extract actionable business insights from complex real-world data. Led supervised fine-tuning of the state-of-the-art Open AI's whisper model, enhancing its applicability to intricate audio recordings.
- Trained and Deployed a Machine learning model in Tensorflow that combined 3 state of the art face recognition models (VggFace, Arcface, Facenet) using backbones (Resnet and Inception-Resnet) in a way that a small dense neural network combines the output of these models.
- Containerizing the solution to scale the model and deploy on Cloud Run-GCP.
- Automated the end to end machine learning pipeline processes including optimized inference and model output data storage. App is live on Playstore: <https://cutt.ly/WQyOXn4>

Machine Learning Engineer at National Center For Big Data & Cloud Computing (NCBC)

<https://ncbcpeshawar.com/>

Aug 2020-Aug 2021

- Worked on a project funded by Pakistan Tobacco board. To analyze and estimate the production of tobacco growth in Pakistan using Satellite imagery. LSTM-based approach for fusing PlanetScope and Sentinel-2 satellite imagery.
- Responsible for research on how to improve detection and classification of major crops of Pakistan using Satellite imagery. Published a research paper for PLOS ONE journal.
- Applied Deep Siamese Convolutional Networks to create a robust biometric authentication framework, exploring signal preprocessing, feature engineering, and model architecture design tailored to neurophysiological data.

Education

University of Engineering & Technology, Peshawar — MS in Computer Systems Engg.

University of Engineering & Technology, Peshawar — BS in Computer Systems Engg.

Publications

- Long Short Term Memory(LSTM) Deep Net performance for Fused Planet-Scope and Sentinel-2 Imagery.
Journal - PLOS-ONE <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0271897>
- Advancing EEG-based biometric identification through multi-modal data fusion and deep learning techniques.
Journal - Springer Nature <https://link.springer.com/article/10.1007/s40747-025-02012-6>