Awais Tariq

Machine Learning Engineer | Data Scientist

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PROFESSIONAL SUMMARY

I am a Machine Learning Engineer and AI developer with 2+ years of experience in building R&D AI systems and data pipeline automations. I have hands-on experience in optimizing and automating data ingestion pipelines, design thinking, PyTorch, TensorFlow, and Hugging Face Transformers. I am eager to apply my expertise by improving data pipelines and collaborating with cross-functional teams in your organization.

EXPERIENCE

AI Research Assistant (Team Lead) | AIM LAB, FAST NUCES   *APRIL 2024 – PRESENT*

- Pioneered an innovative deep learning approach **using multimodal disentanglement learning**, which **improved deepfakes detection** model's **accuracy** to **94%.**
- **Lead** a team of **5 Research Assistants** that developed a deepfakes detection system that **reduced** half-total error rate **(HTER) by 6%.**
- Implemented 2 State-of-the-art deepfakes detection methods (SADTH-Net, TDVSA-Net) published in IEEE Transactions on Circuits and Systems for Video Technology in 3 months.
- Reduced required video samples per user from 70 to 50 maintaining accuracy and HTER for improved real-time feasibility.

Python Developer | GLOBAL LINK   *DEC 2023 – MAR 2024*

- Developed an **AI-powered personnel-monitoring system** with facial recognition, pose estimation, and mobile phone detection **using YOLOv5** for enhanced workplace monitoring.
- **Conducted quality assurance on Google-affiliated LLMs,** assessing multiple responses to queries and benchmarking them, resulting in a **15%** improvement in **precision** and a 20% reduction in hallucinations.
- Designed an automated advertising solution for tablets/screens using Python and Raspberry Pi 4, enhancing client engagement through seamless ad delivery while ensuring content integrity with restricted access.

DESIGN ENGINEER | Oxbridge Innovative Solutions   *NOV 2023*

- Designed and implemented Smart Farming System based on IoT control via Esp32, which automated the irrigation of various types of plants.
- Addressed design challenges and evaluated alternative design models to meet project requirements.

SKILLS

Programming	Python • C++/C • CSS • JavaScript • MATLAB
Machine learning	Reinforcement Learning • Multi-Task & Disentanglement Learning • NLP • **Applied Computer Vision** **Generative AI** • Data Science • **Data Ingestion** • **Pipeline Automation** • **GANs** • **VAEs** • **EDA** • **ETL** **Diffusion Models** • Preprocessing • LoRA • RAG • **Big Data** • **Apache Spark**
Deep learning	**Pytorch** • **Pytorch Lightning** • **Tensorflow** • Keras • **Hugging Face(Transformers)** • SciPy • **OpenCV**
Frameworks	Scikit-Learn • **Optuna** • AWS • **PySpark** • **GDAL** • **Weights & biases(Wandb)** • **Apache Hadoop**
Web Development	Node.Js • Flask • REST API • SQL • MongoDB

PROJECTS

❖ **Smart Agriculture Farm** (FYP)
| **Raspberry Pi-4 based Image processing** for Harvest detection | Smart Seed Sowing Robot | Automatic Irrigation System

❖ **Predictive Modeling for COVID-19 Patient Classification** Leveraging Automated **Feature Engineering and Hyper-parameter Optimization**

- ❖ Improving Tweet Sentiment Analysis with **GBM** and **AdaBoost**

- ❖ Point-to-Mask: **Limited-Point Semantic Segmentation with SegFormer**

- ❖ **Semantic Segmentation with Fine-tuned Efficient-Net.**

- ❖ **Resnet-18 for Intel Image Classification achieving 96 % test accuracy.**

- ❖ **Automatic Geo-Referencing System using Local Feature based Image Matching and GDAL library.**

- ❖ **Data Ingestion** and Quality Assurance for AAVAIL: A Hands-on Project

- ❖ **Context-Aware Masked Language Modeling** (MLM) for Text Infilling with **Hugging Face BERT**

- ❖ **Configured and Deployed Apache Spark Multi-Node Cluster for Big Data Analytics on Covid-19 Dataset for patient classification and mortality rate prediction.**

EDUCATION

MS – Artificial Intelligence	NUCES FAST, Islamabad	*2023-Present*
BE – Electrical Engineering	AIR University, Islamabad	*2023*

CERTIFICATIONS

- ▪ **AI Workflow: Business Priorities and Data Ingestion** (2024)
- ▪ **IBM AI Developer** (2023)
- ▪ **Developing AI Applications with Python and Flask** (2023)
- ▪ **Building AI Applications with Watson APIs** (2023)