Muhammad Hisan Usman

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WORK EXPERIENCE

20/01/2025 – CURRENT Islamabad, Pakistan
TEACHING ASSISTANT NATIONAL UNIVERSITY OF COMPUTER & EMERGING SCIENCES

- Working as a teaching assistant in the course of Digital Image Processing and assisting in organizing seminars.
- Responsible for grading assignments and quizzes and clarifying concepts to students in areas where they struggle.

24/06/2024 – 03/08/2024 Islamabad, Pakistan
MACHINE LEARNING INTERN TERADATA

- Created deep learning models leveraging Teradata Vantage with teradataml for large-scale financial analytics, and separately with sklearn for various deep learning workflows.
- Developed the entire data science pipeline—from preprocessing and feature engineering to model training and evaluation.
- Harnessing Teradata's in-database analytics capabilities, I optimized workflows for handling vast datasets while ensuring scalable and efficient model development.

20/06/2024 – 12/08/2024 Islamabad, Pakistan
TEACHING ASSISTANT NATIONAL UNIVERSITY OF COMPUTER AND EMERGING SCIENCES

- Worked as a part-time teaching assistant, in the course of Parallel and Distributed computing.
- Explained and reinforced concepts that were taught in class, as well as grading quizzes and assignments.

25/09/2023 – 25/12/2023 Islamabad, Pakistan
LAB DEMONSTRATOR NATIONAL UNIVERSITY OF COMPUTER AND EMERGING SCIENCES

- Checked lab tasks and assignments of students.
- Helped conduct coding tasks and resolved any errors encountered by students.

20/07/2023 – 19/09/2023 Islamabad, Pakistan
ARTIFICIAL INTELLIGENCE INTERN SYSTEMS LIMITED

- Automated the data-science pipeline by removing the need for ML Engineers to write code for training models, visualizing data, and exploring datasets.
- Allowed users to view numerous interactive graphs, evaluate and save trained models, at just the click of a few buttons.
- Improved the efficiency and performance of ML Engineers by saving time and allowing to focus more on other tasks like feature crossing, model performance improvement.

20/06/2023 – 19/07/2023 Islamabad, Pakistan
MACHINE LEARNING INTERN RAPIDEV

- Worked with a team of ML Engineers to automate object detection for a Saudi Military project.
- Used computer vision and trained the model to automatically identify/detect different vehicles from cameras and drones.
- Annotated hundreds of objects which included images from different angels, leading to an improved accuracy of the model.

16/01/2023 – 31/01/2023 Islamabad, Pakistan
DASHBOARD & ANALYTICS INTERN DATA BI

- Analyzed large dataset of various companies by using Tableau and Power BI.
- Presented reports and insights to the clients, which allowed them to make better business decisions effectively.

EDUCATION AND TRAINING

01/09/2021 – CURRENT Islamabad, Pakistan
BACHELOR OF SCIENCE (ARTIFICIAL INTELLIGENCE) National University of Computer and Emerging Sciences

Website https://www.nu.edu.pk/ | **Level in EQF** EQF level 6

DIGITAL SKILLS

Generative AI | Computer Vision | AI Agents | Machine Learning | Retrieval Augmented Generation (RAG) | LangChain | Deep Learning | Large Language Models | Data Science | huggingface transformers | Data Engineering | PyTorch | Deep Neural Networks (CNNs, GANs, VAEs), Tensorflow, Keras | Python | Scikit-Learn | OpenCV | MLOPS | Apace Airflow | Numpy | Pandas | Matplotlib | HTML/CSS

PROJECTS

19/08/2024 – CURRENT
CCTV Surveillance using computer vision and Gen AI

This project uses a multi-modal approach to detect violent activities in CCTV footages, along with integrating scene understanding through CLIP and automatic AI report generation via LangChain (OpenAI & FLAN-T5). Criminal detection and recognition is also implemented in order to identify criminals in CCTV feeds and alert authorities.

Link https://github.com/hisanusman/Violent-activities-detection-and-scene-understanding

20/01/2025 – CURRENT
AI Agent for university portal

Creating an AI agent that automates university portals for instructors, lecturers, and professors by allowing them to upload a PDF file of their classroom records, with AI handling result generation, emails, and other tasks. Instead of teachers manually spending time on these small tasks, the agent will perform all the calculations and functions itself, saving time and improving efficiency for teachers.

14/10/2024 – CURRENT
Deep learning for custom emoji generation from facial expressions

Creating a deep learning model which will be using generative ai (GAN's) to create emojis based on the facial expressions.

01/10/2024 – CURRENT
Sign language detection and audio generation

Training a model to automatically detect sign language gestures and form proper sentences. The model will also include the feature of audio generation using text to-speech (TTS) models.

10/11/2024 – 17/11/2024
Human Action Recognition with Vision Transformer

The Vision Transformer (ViT) model, traditionally used for image classification, has been fine-tuned to recognize actions from short video clips (taken from HMDB Dataset). By learning patterns across frames, the model distinguishes among multiple action classes. By extracting frames from videos, preprocessing them, and fine-tuning a ViT model, we aim to classify actions accurately with a target accuracy of 90% (accuracy of 95% achieved on training & testing set, each).

Link https://github.com/hisanusman/Vision-Transformer-for-Human-Activity-Recognition

24/06/2024 – 03/08/2024
Machine Learning Model for Credit Score Classification

Created a machine learning workflow using scikit-learn to classify credit scores into three categories. The objective was to build a robust classification model that accurately predicts the credit score category of individuals based on their financial behavior and related features. The entire workflow includes preprocessing, model training, hyperparameter tuning, an evaluation.

Link https://github.com/hisanusman/Credit-Score-Model

15/04/2024 – 27/04/2024
Diet Planner with AI and LLM's

Trained a K-means clustering model to predict the weight status of a patient and then plan his/her diet, using LLM's, accordingly.

Link https://github.com/hisanusman/Diet-Planner-with-Unsupervised-learning-and-LLMs

10/11/2023 – 05/12/2023
Stock Price Prediction with LSTM (Reinforcement Learning)

Trained a Long-short-term-memory (LSTM) model on the stock price of Google and used an API for live stock prediction.

Link https://github.com/hisanusman/Stock-Price-Prediction-Google-