ADNAN YOUSAF

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OBJECTIVE

Recent AI graduate with expertise in machine learning, NLP, computer vision, and generative AI. Currently seeking roles in these fields to apply my knowledge and contribute to innovative projects in a dynamic tech environment.

EDUCATION

Bachelor of Artificial Intelligence, *FAST NUCES University Islamabad*   2019 - 2023
Relevant Coursework: Generative AI, Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, Reinforcement Learning

SKILLS

Technical Skills	Python, C++, Flask, Numpy, Pandas, Data Structures and Algorithms, Web Scraping, HTML, CSS, Git, Github, Docker, MLOps.
Soft Skills	Problem Solving, Critical Thinking, Communication, Team Collaboration, Time Management, Adaptability, Continuous Learning
AI/ML Skills	TensorFlow, Keras, PyTorch, Scikit-Learn, Natural Language Processing (NLP), Computer Vision, OpenCV, Digital Image Processing, Neural Networks, Data Analysis, Feature Engineering, LLMs, Finetuning, Huggingface, Langchain, Vectordatabases: VectorDB, Qdrant, ChromaDB

EXPERIENCE

Leaf Disease Detection Project (Contract Work)

Collaborated with a company on a contract basis to develop an AI-based solution for detecting leaf diseases in agricultural crops. Utilized a leaf dataset containing various diseases and applied computer vision and image processing techniques to analyze and classify the diseases. The project involved the use of PyTorch for model development and training, leveraging deep learning algorithms to achieve accurate disease detection.

PROJECTS

FashionVision (Final Year Project)

FashionVision is an innovative AI-driven recommendation system designed to revolutionize the way customers visualize and select dresses. By leveraging advanced image generation techniques, our system transforms small fabric design patches into full dress images, allowing users to preview and tailor their chosen styles effortlessly.

Web-Based Chat Application Using Retrieval Augmented Generation (RAG), LangChain/LangSmith

Designed and implemented a web-based chat application utilizing Retrieval Augmented Generation (RAG) techniques, integrating open-source large language models with structured data from MS Thesis titles and abstracts to generate insightful, contextually relevant information.

Generative Adversarial Networks (GANs)/DCGANs

Developed and trained a DCGAN on the CIFAR-10 dataset, incorporating real image class labels and a "Fake" class for generated images. Fine-tuned hyperparameters, executed data preprocessing, and evaluated image quality through FID score and qualitative analysis.

Variational Autoencoder (VAE)/CVAE

Developed a Variational Autoencoder (VAE) on the CIFAR-10 dataset, optimizing with reconstruction loss and KL divergence. Evaluated image quality using Fréchet Inception Distance (FID) and performed hyperparameter tuning for improved performance.

Sentiment Analysis using Multi-Perceptron (Fully Connected) Neural Network

This project primarily focused on meme analysis, where I constructed a multi-modal neural network with two inputs: one being the image and the other being the OCR of the image.

Home Automation Task (Programming for AI/Python)

Led the creation of a dataset consisting of around 10,000 voices, focusing on phrases like "Ruha darwaza kholo" and "Ruha light on karo" for AI system recognition. The front-end deployment and testing of our AI system were accomplished using Flask, providing a user-friendly interface. This experience enhanced my skills in voice recording, dataset management, and front-end development.

Implementation of Point-Net Paper (Artificial Neural Network/Python)

Implemented the Point-Net Paper as a final semester project for the Artificial Neural Networks course, a core course of the BS in Artificial Intelligence.

Implementation of Neural Network using OS Concepts (Operating Systems/C Language)

This project focused on designing an OS with a neural network architecture using separate processes and threads on a multi-core processor.

Genetic Algorithm (Artificial Intelligence/Python)

OPEN SOURCE CONTRIBUTIONS

- Contributed to the Mozilla Common Voice project by collecting and verifying Urdu language data, enhancing the dataset's accuracy and coverage.