Muhammad Hammad

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Machine Learning Engineer

Fresh graduate with a strong foundation in Python programming and a passion for machine learning. Excited to apply academic knowledge in fine-tuning Large Language Models (LLMs), Natural Language Processing (NLP), and transfer learning. Eager to collaborate within multidisciplinary teams, learn, and contribute to innovative solutions while staying abreast of emerging technologies.

EDUCATION

Bachelor's degree in Computer Software Engineering
University Of Engineering and Technology, Mardan • GPA: 3.7+ **10/2020 - 07/2024**

CERTIFICATIONS

Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning **08/2024**
DeepLearning.AI

Foundations: Data, Data, Everywhere **08/2024**
Google

Natural Language Processing in TensorFlow **02/2024**
DeepLearning.AI

Generative AI with Large Language Models **01/2024**
DeepLearning.AI

Convolutional Neural Networks in TensorFlow **12/2023**
DeepLearning.AI

Ask Questions to Make Data-Driven Decisions **12/2023**
Google

Machine Learning Pipelines with Azure ML Studio **07/2023**
Coursera Project Network

AWARDS & SCHOLARSHIPS

Deans List for earning 3.5 or higher GPA **12/2022**
University of Engineering and Technology, Mardan

PROJECTS

Urdu Text-to-Speech (TTS) for Male Voice **01/2024 - Present**

My Role: AI Engineer

Measurable Results:

- Created a comprehensive Urdu dataset of transcriptions and voices for male speech synthesis.
- Preprocessed the dataset, including phonemization, to align with the requirements of the TTS model.
- Fine-tuned the model achieving training accuracy of approximately 60% and validation accuracy of around 65%.
- Ongoing efforts to further fine-tune the model for improved speech synthesis performance.

Multilingual Voice Transformation for Seamless Communication **11/2023 - Present**

My Role: Lead Machine Learning Engineer

Measurable Results:

- Developed a seamless multilingual voice transformation system capable of converting a speaker's voice into an unseen language while preserving voice features.
- Achieved high accuracy in preserving voice identity during transformation, with a fidelity rating of 90% based on user feedback.
- Successfully demonstrated the system's effectiveness in facilitating multilingual communication, fostering inclusivity and accessibility.

Dialogue Summarization with LLM Fine-tuning using PEFT (Lora) Technique **01/2024 - 01/2024**

My Role: Lead Machine Learning Engineer

Measurable Results:

- Achieved comparable dialogue summarization accuracy to full fine-tuning of the base model, with only a 10% difference between the two approaches.
- Reduced memory resource utilization by 30% and training time by 40% compared to full fine-tuning.
- Successfully demonstrated the effectiveness of the PEFT (Lora) technique in optimizing model performance while maintaining resource efficiency.

Voice Cloning with StarGAN-VC2 **11/2023 - 12/2023**

My Role: Machine Learning Engineer

Measurable Results:

- Developed a custom dataset and preprocessed it to meet the constraints of the StarGAN-VC2 model.
- Trained the model to successfully clone voices, achieving a high degree of similarity to the target voice.
- Demonstrated the feasibility of voice cloning for custom applications, opening up possibilities for personalized voice synthesis.

SKILLS

Machine Learning/AI: Computer Vision, Data Analysis, Exploratory Data Analysis, Generative AI, Large Language Models (LLM), Natural Language Processing (NLP), Python (Programming Language), Recurrent Neural Networks (RNN), TensorFlow, Transfer Learning

Backend: Laravel, Node.js, Php core

Database: Database design, MSSQL, MYSQL, NO SQL