

Aqsa Asif

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Education

Air University *Islamabad, PK*

September 2020 - June 2024

Bachelor of Science in Computer Science

Final Year Project (FYP): Fashion Pattern Generation using DCGAN

- Developed a deep convolutional generative adversarial network (DCGAN) for generating fashion patterns.
- Researched and applied advanced neural network techniques for the project.

Relevant Courses: Machine Learning, Artificial Intelligence, Data Science, Deep Learning, Digital Image Processing, Web & Mobile Development, OOP, Data Structures

PAEC Model College *Nilore, Islamabad, PK*

August 2019 - July 2020

Intermediate in Science

Professional Experience

AI Intern | Web & App developer | Researcher *Islamabad, PK*

July 2022 - Present

Pakistan Institute of Engineering & Applied Sciences (PIEAS) (Jul 2022 – Present | Hybrid)

- Contributed to chatbot development for a Discrete Mathematics course using NLP and BERT for AI-driven education tools.
- Built and deployed web and mobile applications for chatbot integration using Flask and Firebase.
- Conducted research and implemented projects involving Autogens, GANs, Neural Networks, YOLO, and LLMs, focusing on cutting-edge computer vision and data science advancements.
- Collaborated on multiple research publications and enhanced the chatbot's performance with innovative AI solutions.

Freelancer | Machine Learning and Data Science Practitioner

July 2023 - Present

Fiverr, Upwork (Feb 2023 – Present | Remote)

- Delivered diverse computer science projects, including programming, data science, web development, and machine learning.
- Developed systems for speech recognition (GAN-based TTS/STT), PDF text extraction, and text-to-video generation using advanced AI tools, AI assistants using LangChain and LangFlow
- Specialization in computer vision, leveraging Llama models and generative adversarial networks.

AI Intern | Web developer *Islamabad, PK*

July 2023 - September 2023

Air University (Jul 2023 – Sep 2023 | Islamabad, PK)

- Developed a healthcare web application using Blazor and .NET framework, focusing on MVC architecture for scalability and maintainability.
- Expanded skills with speech-to-text systems and participated in interdisciplinary AI research.

Projects

- Fashion Pattern Generation (DCGAN): Developed a design pattern generator to create new patterns based on image or text inputs using advanced neural networks.
- Text-to-Video Generation (LLaMA, GANs): Designed a pipeline that generates videos from text prompts, leveraging generative adversarial networks and LLMs.
- Speech Recognition System: Built Text-to-Speech (TTS) and Speech-to-Text (STT) systems to produce text and audio based on respective inputs using pre-trained GANs.
- Movie Recommendation System: Created a content-based filtering recommender system for personalized movie suggestions.
- Healthcare Web Application (Blazor, SQL): Developed a healthcare web solution tailored for patients with disabilities, employing the MVC architecture for scalability.
- Image-to-Text Web Application (ResNet50, OpenCV): Designed a system to convert input images into textual output for seamless data extraction.
- Discrete Math Chatbot (BERT, NLP): Built and deployed web and mobile applications for an AI-driven chatbot to assist students with discrete mathematics.
- Sentiment Analysis using BERT
- Object detection using MaskRCNN and FastRCNN.
- Object Detection (YOLO): Implemented a robust object detection system using YOLO to identify and classify objects in real-time for diverse applications.
- AI assistants using Langchain and Langflow.
- Autogen Agent Conversations: Designed and tested conversational agents with Autogen for dynamic, context-aware interactions in advanced AI systems.

Skills

Technical skills:

- Programming: Python, C#, C++
- Technologies: TensorFlow, Pytorch, Keras, OpenCV, Beautiful Soup, Flask, RESTful APIs, Firebase, Android Studio
- Machine Learning: CNN, RNN, GANs, NLP, Data Science
- Web Development: Flask, Blazor
- Speech Recognition, Web Scraping, Data Science

Soft skills:

- Decision-Making, Communication, Team Leading, Multi-tasking, Attention to Detail

Publications

- **A Survey of Vision Transformers and Their CNN-Transformer Based Variants** - Published in Artificial Intelligence Review (2023), Impact Factor: 12.00.
- **A Recent Survey of Vision Transformers for Medical Image Segmentation** - Published on arXiv (2023).
- **Deep Auto Encoder-Based Chatbot for Discrete Math Course** - Presented at the 2022 International Conference on Recent Advances in Electrical Engineering & Computer Sciences (RAEE & CS), IEEE.

Achievements & Certifications

Participant: "Queen of Codes" Coding Competition, AUCIS Women in Computing Club | 2023

Winner: Air University Writers Club Writing Competition | 2022

Coursera Certifications

- Machine Learning Specialization (Issued Feb 2024)
- Advanced Learning Algorithms (Issued Feb 2024)
- Image and Video Processing (Issued Feb 2024)
- Neural Networks and Deep Learning (Issued Aug 2023)
- Unsupervised Learning, Recommenders, and Reinforcement Learning (Issued Sep 2023)
- Supervised Machine Learning: Regression and Classification (Issued Aug 2023)

Microsoft Copilot Challenge Badges

- Introduction and Implementation of Copilot for Microsoft 365, Power Automate's Deep Integration Across Data Sources ,Use AI Builder in Power Automate, Add Intelligence with AI Builder and GPT