

TANEEM ULLAH JAN

Peshawar, Pakistan

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RESEARCH INTERESTS

Interested in formulating and developing intelligent systems with a focus on machine vision for a variety of applications, including generalization via domain adaptation approaches. Also in modelling new algorithms and techniques for optimisation and evaluation at the intersection of computer vision and natural language processing to push the boundaries of Artificial Intelligence.

EDUCATION

University of Engineering and Technology Peshawar, Pakistan

Sep. 2018 – Sep. 2022

Bachelor Studies in Computer Science

Advisor: [Dr. Zakira Inayat](#)

Research Thesis: HTML Code Generation from Images with Deep Neural Networks

CGPA: 3.58/4.0

Government College Peshawar, Pakistan

Sep. 2016 – June. 2018

Intermediate in Computer Science

WORK EXPERIENCE

BHuman AI

Jan. 2023 – Present

Research AI Engineer

New York, USA

- Currently working on the development of personalized AI for 1-to-infinity conversational videos, utilizing deep learning and computer vision to improve LipSync and Neural Head Avatar technologies. The objective of this work is to bring the conversational videos to new heights by making it more natural and personalised.

CS&IT AI Lab UET Peshawar

Jan. 2022 – Oct. 2022

Student Research Assistant

Peshawar, Pakistan

- Worked with [Dr. Zakira Inayat](#) on deep generative models, including transformers for vision and text, and image processing through deep neural networks. Conducted studies on mathematical optimization and evaluation techniques to improve the consistency of machine learning models.
- Developed and implemented various deep learning architectures for tasks such as data generation, machine translation, and classification, with a focus on reproducing state-of-the-art results and gaining expertise in mathematical representation and optimization models.

NAECO Blue GmbH

Aug. 2021 – Nov. 2021

Intern Machine Learning Engineer [web](#)

Bad Schartau, Germany

- Conducted research and evaluation of intelligent and numerical weather models and their APIs to support the company's data needs, resulting in the implementation of a data pipeline that reduced the research and development time by almost half.
- Developed analytical tools and machine learning models to aid in the selection of the best spatial and temporal resolution data for specific locations. I have gained experience in the application of machine learning in industry and working in a collaborative team environment outside academia.

RESEARCH PROJECTS

- HTML Code Generation from Images with Deep Neural Networks** [web](#) Dec. 2021 – Aug. 2022
- Applying the machine translation and image captioning techniques to convert images into words and sentences with the use of deep neural networks.
 - Inspecting and featuring images with Convolutional Auto-Encoder, to encode them into lower dimensional space and features.
 - Decoding and mapping those lower level features with Sequential Networks to generate HTML codes.
 - The results achieved are higher and more accurate than the paper comparatively, published with 77%.
 - **Dataset:** Custom dataset created.
 - *Stacks Used:* Python, TensorFlow, Keras, OpenCV, NumPy, Matplotlib.
- LaTeX– Formula Code Generation from Images** [web](#) Sep. 2022 – Nov. 2022
- Combining both Computer Vision and NLP tasks to generate mathematical formulae from images.
 - The convolutional encoder captures and extracts inner features from images.
 - LSTM based decoder then tries to generate the LaTeX code from the passed token vectors along with Soft Attention Mechanism to enhance the performance.
 - A *BLEU* score of 78% is achieved accompanying by 62% of image edit distance.
 - **Dataset:** Pre-built dataset :: Harvard im2markup.
 - *Stacks Used:* Python, TensorFlow, Keras, OpenCV, Pillow, NumPy.
- Deep Image In-Painting: Generative Vs. Recurrent Models** [web](#) Nov. 2022 – Present
- Improving context encoders by executing several major training tricks on Generative Adversarial Networks and remodel the network to Wasserstein–GAN.
 - Comparative testing of encoders and discriminators based models on top of state-of-the-art models against basic CNN architectures is carried out.
 - Proposed a Row–Flattened LSTM from Pixel–CNNs to show how a simpler model can achieve good results.
 - The L_2 loss acquired here by this proposed model is 4.26 as compared to the others with lowest of 5.27.
 - **Dataset:** Prebuilt dataset :: CIFAR10.
 - *Stacks Used:* Python, TensorFlow, Keras, NumPy.

TECHNICAL SKILLS

Languages:	Python, C++, MATLAB, MySQL, LaTeX
Frameworks/Libraries:	PyTorch, TensorFlow, Keras, NumPy, OpenCV, Scikit-Learn, (Mastering JAX)
Developer Tools:	Git, Jupyter Notebooks, WandB Monitoring Dashboards, Google Cloud Platform

PROFESSIONAL CERTIFICATES

Deep Learning Specialization from deeplearning.ai <i>Coursera</i>	Nov. 2020
Machine Learning from Stanford University <i>Coursera</i>	Jan. 2021
Mathematics for Machine Learning from Imperial College London <i>Coursera</i>	Oct. 2022 – Present

MISCELLANEOUS

- Ranked second, Intermediate Computer Science, Government College Peshawar Batch 2016th July 2018
- Ranked second, BS Computer Science; Batch 18th University of Engineering and Technology Oct. 2022
- Young Undergrad Researcher Award for Bachelor Thesis in Computer Science Oct. 2022
- Remain the head of technical team at Google Developer Student Club for two years Dec. 2020 – Sep. 2022