Qaiser Abbas
Medical AI & Vision Researcher

📞 +92 309 6293789
📍 Lahore, Pakistan
✉ abbas.qaixer@gmail.com

 github/qaixerabbas
 linkedin/qaixerabbas
 kaiserabbas.netlify.app

Seasoned Machine Learning Engineer with 4+ years of industrial experience in Deep Learning, Computer Vision, Natural Language Processing, and Data Science. Strong R&D professional currently working as a Senior Machine Learning Engineer at Oscar AI.

RESEARCH INTERESTS

- Deep Learning
- Computer Vision
- Self-Supervised Learning
- Transfer Learning
- Vision Language Models
- Medical Image Computing

EDUCATION

MS in Computer Science   **Sep 2018 — Dec 2020**
University of Engineering and Technology Lahore, Pakistan | *Top 10%*   CGPA: 3.78/4.00
- Thesis: Detection and Prediction of Acral Lentiginous Melanoma in Dermoscopic Images using Deep Learning
- Major Courses: Machine Learning, Research Methods, Software Quality Assurance, Deep Learning

BS in Information Technology   **Oct 2014 — May 2018**
University of Sargodha, Sargodha, Pakistan | Gold Medalist   CGPA: 3.63/4.00
- FYP: Energy Optimized Smart Surveillance System using a Raspberry Pi and Pi Camera
- Major Courses: Artificial Intelligence, Network Security, Cloud Computing, IT Infrastructure

PUBLICATIONS

1. **Qaiser Abbas**, Nadeem Yousaf, "ChesTNeXt: Leveraging Orthogonal Projection Loss with Efficient Convolution-Attention Architecture for Chest Disease Diagnosis" (Ongoing).

2. **Qaiser Abbas**, Sabahat Qayyum, "Diffusion based Generative Pre-Training for Skin Lesion Analysis" (Ongoing).

3. **Qaiser Abbas**, Farid Khan, Muhammad Irzam Liaqat, "From Inductive Priors to Learned Attention: Revisiting Remote Sensing Image Analysis through Modern Architectures" (Under Review)

4. **Qaiser Abbas**, Muhammad Irzam Liaqat, Sabahat Qayyum, Sadaf Hina, "Rethinking Complexity in Deep Learning for Histopathology: On the Effectiveness of Convolution-Based Architectures" (Under Review).

5. Sadaf Hina, **Qaiser Abbas**, Kashan Ahmed, "Adversarial attacks on artificial Intelligence of Things-based operational technologies in theme parks," *Internet of Things*, Vol. 32, Art. 101654, 2025.

6. **Qaiser Abbas**, Sadaf Hina, Hamza Sajjad, Khurram Shabih Zaidi, Rehan Akbar, "Optimization of Predictive Performance of Intrusion Detection System Using Hybrid Ensemble Model for Secure Systems," *PeerJ Computer Science*, Vol. 9, e1552, 2023.

7. Hamza Khalid, Ghulam Murtaza, **Qaiser Abbas**, "Using Data Augmentation and Bidirectional Encoder Representations from Transformers for Improving Punjabi Named Entity Recognition," *ACM Transactions on Asian and Low-Resource Language Information Processing*, 2023.

8. **Qaiser Abbas**, Anza Gul, "Detection and Classification of Malignant Melanoma Using Deep Features of NASNet," *SN Computer Science*, Vol. 4, Issue 1, 2023.

9. **Qaiser Abbas**, Farheen Ramzan, Muhammad Usman Ghani, "Acral Melanoma Detection Using Dermoscopic Images and Convolutional Neural Networks," *Visual Computing for Industry, Biomedicine, and Art*, Vol. 4, Issue 1, 2021.

TECHNICAL SKILLS

Programming Languages	Python, C++(Basic), MATLAB, JS(Basic), SQL
Generative AI	LangChain, LlamaIndex, OpenAI SDK, HuggingFace
Deep Learning	Keras, TensorFlow, OpenCV, FastAI, PyTorch, OpenVino, Transformers, SpaCy, NLTK
Machine Learning	Numpy, Pandas, scikit-learn, Matplotlib, Seaborn
Tools	LaTex, Linux, VS Code, Jupyter-Notebook, Google Colab, Postman, Streamlit
Technologies	Git, FastAPI, SQLModel, SQLAlehemy, HTML, CSS, Docker, Azure, AWS
Soft Skills	Time Management, Leadership, Communication, Team Work

EXPERIENCE

Sr. Machine Learning Engineer   **Nov 2024 — Present**
Oscar AI   Washington, Remote

- Development of custom ML solutions for the retail sector, focusing on improving sales forecasting and customer insights.
- Implementation of Generative AI solutions for text analysis, report generation, and sentiment analysis to derive actionable sales insights.
- Improvement of open-source and proprietary LLMs such as GPT, BERT, and LLaMA for financial analysis and predictive modeling.

Sr. Machine Learning Engineer   **Aug 2024 — Nov 2024**
Octopus Digital   Lahore, Pakistan

- Developed an end-to-end forecasting solution for financial metrics (OPEX, CAPEX, REVENUE, PRODUCTION) as a Full Stack ML Engineer.
- Utilized statistical methods (ARIMA, Seasonal Naive, Holt-Winters, Exponential Smoothing) and ML models (LGBMRegressor, XGBoost, AutoNHITS, AutoNBEATS) to enhance forecast accuracy.
- Deployed an automated forecasting pipeline with monthly scheduled runs for data fetching, model training, and forecasting.
- Collaborated with data engineering and business teams to ensure alignment with organizational goals and forecasting accuracy.

Machine Learning Engineer   **Nov 2022 — Aug 2024**
SDSol Technologies   Lahore, Pakistan

- Designed and developed an audio analysis pipeline for psychological applications using LLMs (Whisper and GPT)
- Developed a multiprocessing GPU based pipeline for audio (therapy sessions) processing.
- Utilized LLMs (GPTs) for development of a personalized treatment plan generation for mental health to assist therapists.
- Finetuned a GPT-3.5 Turbo for customized treatment plan generation using OpenAI SDK and deployed using FastAPI on AWS EC2.
- Trained small langauge models (BERT, ALBERT) for customer query classification for reducing OpenAI API costs.
- Leveraged LangChain and LlamaIndex for custom document question answering bot.
- Developed a website assistant bot using GPT and LlamaIndex and deployed using FastAPI.
- Pioneered the development of a GPU-accelerated backend daemon on AWS EC2 instance for audio and text data processing.
- Utilized unsupervised association rule mining to develop a food recommendation engine and deployed it using FastAPI.
- Leveraged AWS services including EC2, S3, Lambda, ECR, and AppRunner to ensure seamless and scalable system deployment.
- Developed an insect classification model using transfer learning, optimized for CPU inference using Intel OpenVino and deployed using Azure Container Registry and Azure App service.
- Developed a tennis player/ball detection model via finetuning YOLOv8 and integrated it into active learning pipeline for automatic annotation using LabelStudio.
- Utilized deep transfer learning for development of aerial scene understanding models using remote sensing images.
- Developed a human related crime identification model via finetuning EfficientNet and trained on a custom dataset.

Software Engineer (Deep Learning & Computer Vision)   **Nov 2021 — Jan 2022**
Wortel AI   Remote

- Created a robust weed detection algorithm using YOLOv5 and satellite imagery.
- Developed a medical speech recognition system by fine-tuning an Nvidia QuartNet model via NeMo library.
- Leveraged AWS S3 and MLFlow platforms for efficient deployment and continuous maintenance of deep learning models.

AI Instructor & Teaching Fellow   **Mar 2021 — Sep 2022**
University of Engineering and Technology Lahore   Lahore

- Effectively taught comprehensive undergraduate courses in both AI & ML, including theory and hands-on lab sessions.
- Collaborated closely with senior faculty for development of AI/ML course content & preparation of research grant proposals.
- Authored a research proposal titled "Tea Disease Detection using Machine Learning and Remote Sensing." which secured a research grant of PKR 3.5 Million from the Higher Education Commission's National Research Program for Universities.

Freelance Deep Learning Engineer   **Nov 2020 — Mar 2021**
UpWork & Freelancer   Remote

- Developed an image captioning algorithm for image retrieval by leveraging natural language descriptions of images.
- Designed and developed a GAN model specifically tailored for the generation of synthetic COVID-19 CT scans.
- Developed a face recognition model using a custom developed CNN.
- Utilized SHAP and LIME for developing interpretable image classification models.

Research Assistant (Deep Learning)   **Jan 2020 — Oct 2020**
Bioinformatics Research Lab, UET   Lahore, Pakistan

- Worked with Prof. Dr. Usman Ghani for detection of rare & lethal Acral Lentiginous Melanoma using dermoscopic images.
- Designed and implemented a specialized CNN architecture to develop an effective detection system for acral melanoma.
- Actively participated in Plant Disease Detection projects, leveraging deep learning and leaf image datasets.

Computer Vision Engineer   **Aug 2019 — Dec 2019**
Wizdojo Technologies   Lahore, Pakistan

- Developed a vehicle registration plate detection system using Mask R-CNN and Faster-RCNN.
- Collected & labeled data from live surveillance cameras & trained a Mask-RCNN model to segment the vehicle registration plates.
- Designed a pipeline for extracting text from segmented license plate using Tesseract OCR.
- Developed a static website using HTML/Boostrcap/CSS for the company's product FuelAI.

CERTIFICATIONS

- IELTS (Academic) - Overall Band 7.0 (Listening: 6.0, Reading: 7.0, Writing: 7.5, Speaking: 7.0), **CEFR Level: C1**   Oct 2023
- An Intuitive Introduction to Probability by University of Zurich   Oct 2023
- Deep Learning Specialization by deeplearning.ai   April 2021
- Mathematics for Machine Learning by Imperial College London   Sep 2020
- Python 3 Programming Specialization by University of Michigan   July 2020
- AI for Medical Diagnosis by deeplearning.ai   June 2020

ACADEMIC SERVICES

- Reviewer for Academic Journals:
  - ACM Transactions on Asian Language Information Processing   2025 - Present
  - Visual Computing for Industry, Biomedicine, and Art   2022 - Present
  - Informatics in Medicine Unlocked   2022 - Present
  - SN Computer Science   2022 - 2025
- Promoting Education in Remote Areas: Facilitating education access in under-served regions of Punjab (Pakistan).
- Career Guidance Tutor: Providing guidance for career development to undergraduate students.
- Project Advisor: Actively advising multiple students in R&D for their research projects.

AWARDS & HONORS

- Ranked in the Top 10% of the MS Class at UET Lahore.   Dec 2020
- Excellence Scholarship, Defence Housing Authority Lahore (1st Position in BS) - 120,000 PKR.   Oct 2019
- Fauji Foundation Excellence Award (1st Position in BS) - 30,000 PKR.   Mar 2019
- Gold Medalist (Campus Level), University Of Sargodha, Sargodha.   May 2018
- Served as a Teaching Assistant for Network Security and Cloud Computing.   (2017-2018)
- Represented my BS class as a CR for four consecutive years.   (2014-2018)
- Departmental Scholarship for securing 1st position across eight consecutive semesters during the BS program.   (2014-2018)

REFERENCES

- Prof. Dr. Muhammad Usman Ghani Khan
  Professor & Chairman Department of Computer Science, UET Lahore, Pakistan
  email: `usman.ghani@uet.edu.pk`
- Dr. Sadaf Hina
  Lecturer, Department of Computer Science, University of Salford, the UK
  email: `s.hina@salford.ac.uk`
- Muaaz Hafiz
  Project Manager, SDSol Technologies
  email: `muaaz@sdsol.com`