Qaiser **Abbas**

(+92) 309-6293789 | ✉ abbas.qaixer@gmail.com | 🏠 qaixerabbas.github.io/ | qaixerabbas | in qaixerabbas | S live:qaixer514

Education

M.S Computer Science   *Lahore, Pakistan*

UNIVERSITY OF ENGINEERING AND TECHNOLOGY LAHORE

3.78/4.0 CGPA – 94.25% - TOP 10%   *Oct 2018 - Nov 2020*

THESIS: ACRAL LENTIGINOUS MELANOMA DETECTION USING DERMOSCOPIC IMAGES AND CONVOLUTIONAL NEURAL NETWORKS

B.S Information Technology   *Sargodha, Pakistan*

UNIVERSITY OF SARGODHA

3.63/4.0 CGPA – 90% - GOLD MEDAL (CAMPUS)   *Oct 2014 - July 2018*

FINAL YEAR PROJECT: IOT BASED LOW COST INTELLIGENT SURVEILLANCE SYSTEM FOR SMART HOME SECURITY

Experience

Department of Computer Science, University of Engineering and Technology   *Lahore, Pakistan*

TEACHING FELLOW   *Mar 2021 - Present*

- Teaching undergraduate courses and assisting the senior faculty in course design and writing proposals for research grants.
- Research the latest Deep Learning and Computer Vision technologies to solve real-world problems.
- Mentoring final-year students in their Final Year Projects (FYPs).

WortelAI   *Lahore, Pakistan*

SOFTWARE ENGINEER (DEEP LEARNING AND COMPUTER VISION)   *Nov 2021 - Dec 2021*

- Worked on weed detection projects using YOLOv5 algorithm
- Developed a medical speech recognition system by fine-tuning an Nvidia QuartNet model via NeMo library
- Worked on AWS S3 and MLFlow plateform for deployment and maintenance of deep learning models

Bioinformatics Research Lab, Al-Khawarizmi Institute of Computer Sciences   *Lahore, Pakistan*

MS STUDENT   *Jan 2020 - Oct 2020*

- Worked with Dr. Muhammad Usman Ghani Khan on detection of rare and lethal skin cancer Acral Lentiginous Melanoma.
- In this research project we developed a system which detects and predicts the probability of acral melanoma in dermoscopic images.
- Designed a DCNN architecture from scratch in Keras and Tensorflow to classify the skin cancer

Wizdojo Technologies, National Incubation Center   *Lahore, Pakistan*

COMPUTER VISION INTERN   *Aug 2019 - Oct 2019*

- Worked with Dr. Umair Mateen Khan in his startup as a Computer Vision Intern and developed a vehicles registration plate detection system.
- Collected, annotated, and processed data and trained a custom deep learning model to detect and segment the vehicle registration plate.
- Built a small website for the startup using HTML/CSS and Boostrap and WordPress

Department of Computer Science, Government Islamia College Railway Road   *Lahore, Pakistan*

COPMUTER SCIENCE LECTURER   *Nov 2018 - May 2020*

- Taught introductory undergraduate courses
- Operating Systems and Networks
- Programming and Intro to Databases

Computer Vision & Machine Learning Lab, Al-Khawarizmi Institute of Computer Sciences   *Lahore, Pakistan*

DEEP LEARNING INTERN   *Sep 2018 - Oct 2018*

- Built a small image classification neural network using Keras using cars dataset from Google Images
- Learnt about Deep Learning and Computer Vision Basics.
- Developed interfaces of classification systems using HTML/CSS and bootstrap

Publications

1. **Qaiser Abbas**, Farheen Ramzan, and Muhammad Usman Ghani. *"Acral melanoma detection using dermoscopic images and convolutional neural networks."* Visual Computing for Industry, Biomedicine, and Art 4.1 (2021): 1-12.
2. **Qaiser Abbas**, Hamza Sajjad Sadaf Hina, Khurram Shabih Zaidi", *"A Hybrid Light-Weight Approach for Cost-Effective Optimization of Network Intrusion Detection System using Ensemble Method". [Submitted to 'Journal of Network and Computer Applications']*
3. **Qaiser Abbas** and Anza Gul, *"Detection and Classification of Malignant Melanoma using Deep Features of NASNet", [Under Rewiew at 'Springer Nature Computer Science']*
4. **Qaiser Abbas** and Abqa Javed, *"IoT Based Low-Cost Intelligent Surveillance System for Smart Home Security", [Under Rewiew at 'Applied Computer Systems']*
5. **Qaiser Abbas**, Abqa Javed, Nauman Babar, Usman Ghani, *"An efficient deep learning based approach for automated pneumonia classification via chest X rays", [Under Process']*

Projects

Synthetic Data Generation via SPLICE framework for medical images

DEVELOPMENT

- Utilized a pre-trained VIT model to generate synthetic visual data for skin cancer segmentation and classification.
- Used Python and PyTorch for fine-tuning ViT models for generating realistic synthetic data.

Intrusion Detection System Development using Ensemble Learning

RESEARCH

- Utilized SKLEARN for development of an efficient intrusion detection system using NSL-KDD dataset.
- Used Python and various data visualization libraries for exploratory data analysis .
- Designed a simple voting based mechanism for ensemble learning to develop robust intrusion detector

Melanoma Segmentation in dermoscopic images using Deep Learning

DEVELOPMENT

- Developed a melanoma skin lesion detection and segmentation system using TensorFlow and Keras.
- Used Mask R-CNN model and utilized transfer learning with ResNet50 on ISIC 2019 dataset to segment the melanoma lesions.

Firearms Detection and Classification using Deep Learning

RESEARCH

- Developed a complete Firearms detection and classification system using TensorFlow and Keras.
- Yolo v3 model along with transfer learning was trained on IMFDB + custom dataset to detect and classify the firearms.

Emergency Vehicles Classification using Convolutional Neural Network

DEVELOPMENT

- Developed an emergency vehicles classification system using a simple CNN architectrue.
- Trained a Custom CNN model to detect and classify the vehicles using own dataset.

Technical Skills

- **Programming Languages**: Python, C, C++
- **Deep Learning Frameworks**: Keras, TensorFlow, OpenCV
- **Machine Learning Libraries**: Numpy, Pandas, Sklearn, Matplotlib
- **IDEs**: VS Code, Sublime, PyCharm, Jupyter-Notebook, Google Colab
- **Web Engineering**: Wordpress, HTML, CSS, Bootstrap, Flask, Django
- **OS**: Windows 10, Ubuntu, Kali Linux
- **Management Skills**: Leadership, Event Management, Scientific Writing, Public Speaking

Honors & Awards

2019	**Excellence Scholarship**, by DHA Lahore for 1st position in BS (120k PKR)	*Lahore, Pakistan*
2019	**Fauji Foundation Excellence Award**, by Fauji Foundation for 1st position in BS (30k PKR)	*Mianwali,Pakistan*
2018	**Gold Medalist**, BS in Information Technology	*Sargodha, Pakistan*
2015-18	**Fauji Foundation Educational Scholarship**, Got Scholarship throughout my undergraduate studies	*Sargodha, Pakistan*

Professional Services

2021	**Reviewer**, Visual Computing for Industry, Biomedicine, and Art	*Singapore*
2021	**Reviewer**, Informatics in Medicine Unlocked	*United Kingdom*

References

- **Prof. Dr. Muhammad Usman Ghani Khan**
  Professor
  Department of Computer Science, University of Engineering and Technology Lahore, Pakistan
  Email - usman.ghani@uet.edu.pk
- **Prof. Dr. Muhammad Aslam**
  Professor
  Department of Computer Science, University of Engineering and Technology Lahore, Pakistan
  Email - maslam@uet.edu.pk
- **Dr. Sadaf Hina**
  Assistant Professor
  Department of Computer Science, University of Engineering and Technology Lahore, Pakistan
  Email - sadaf.hina@uet.edu.pk