

# Dr. Ahmed Iqbal

## Personal Information

<b>Born:</b>	3 <sup>rd</sup> Feb 1989	<b>Marital Status:</b>	Married
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 **Google Scholar:** <https://scholar.google.com.pk/citations?hl=en&user=tqNZBnMAAAJ>

 **ResearchGate:** <https://www.researchgate.net/profile/Ahmed-Iqbal-3>

 **GitHub:** <https://github.com/ahmedeqbal>

## Brief Introduction

Dr. Ahmed Iqbal is currently serving as Assistant Professor in Department of Computing at SS-CASE-IT, Islamabad, Pakistan. He previously worked as Research Associate in Predictive Analytics Lab under National Center in Big Data & Cloud Computing (NCBC), Islamabad, Pakistan. Dr. Ahmed Iqbal completed his Ph.D. (CS), 2020-2023, from COMSATS University Islamabad, under the supervision of Prof. Dr. Muhammad Sharif Malik. He has published his research works in Top Tier (Q1) Journals of the medical imaging field including Knowledge-Based Systems, Expert Systems with Applications, Engineering Applications of Artificial Intelligence, Journal of King Saud University - Computer and Information Sciences, Biomedical Signal Processing Control, Cognitive Computation, and Tuberculosis Journal, etc., and have an accumulated impact factor of more than 50+. His main research interests include Computer Vision, Medical Imaging, Deep Learning, Vision Transformers. He is also serving as a reviewer of more than 20+ ISI indexed well-reputed Journals including IEEE Transactions on Neural Networks and Learning Systems, Journal of Biomedical and Health Informatics, Artificial Intelligence Review, Applied Soft Computing, Knowledge-Based Systems, and Engineering Applications of Artificial Intelligence. He is proficient in Python and MATLAB and has used various frameworks and tools such as PyTorch, TensorFlow, Open CV, and LaTeX. He has published more than 5 source codes at [GitHub](https://github.com), and 3 datasets at Mendeley data repository.

## Academic Qualification

**Doctor of Philosophy in Computer Science, CGPA 3.84/4.0** **Islamabad, Pakistan**

Computer Science Department, COMSATS University Islamabad (CUI) 2020 – 2023

**Thesis:** An Efficient Scheme for Segmentation and Classification of Breast Cancer Images

**Master of Science in Computer Science, CGPA 3.71/4.0** **Lahore, Pakistan**

Faculty of Computer Science & Information Technology, Virtual University of Pakistan 2016 – 2019

**Thesis:** SDPM - An Effective Model for Software Defect Prediction using Artificial Neural Networks

## Academic Job Experience

2024 – Present **Assistant Professor, Department of Computing, Sir Syed CASE Institute of Technology, Islamabad, PK**

**Job description:** Teaching nine credit hours to undergraduate and graduate students. Supervising three final-year Project, Thesis of undergraduate and graduate students. Establishing research activities in the relevant area of expertise and research funding.

## Research Lab Job Experience

2021 – 2024

### **Research Associate, Predictive Analytics Lab under National Center for Big Data & Cloud Computing (NCBC)**

**Job description:** National Center in Big Data and Cloud Computing (NCBC) aims to become the leading hub of innovation, scientific research, knowledge transfer to the local economy, and training in the area of data analytics, cloud computing, and data science. Under the NCBC umbrella, the Predictive Analytics Lab aims to identify factors of the child mortality rate in Sindh, Pakistan. Which factor influences lady health worker performance, and how to improve it. The primary task was to develop a deep learning-based Tuberculous detection solution for the Sindh healthcare department. The porotype idea is also published in Tuberculous Journal (<https://doi.org/10.1016/j.tube.2022.102234>). The proposed solution is developed in Django framework, PostgreSQL, Scikit-Learn, TensorFlow, and various supportive libraries.

## Industrial Job Experience

2011 – 2019

### **Web Application Developer, PakBase Technologies, Rawalpindi**

**Job description:** PakBase Technologies is a Pakistan-based leading web hosting company. Their primary objective is to provide services in Linux-based and windows-based servers. My task was to develop WordPress, Joomla, and Python Django-based web solutions. My notable project was to develop an MP3 Editor in a web-based Django project. All tasks were related to PHP, MySQL, SQLite, Python, and Django.

2009 – 2010

### **Front-end Developer, Bir Al Sabia Technologies, Rawalpindi**

**Job description:** Bir Al Sabia Technologies is a leading Dubai-based IT company. Their primary objective is to provide services in web-based solutions and client management systems. My task was to develop a unique Front-end interface for the Taleem-e-Quran website, which provides Quran-teaching services to hundreds of overseas students. All tasks were related to Adobe Photoshop, HTML, CSS, JavaScript, PHP, and MySQL server.

## Undergraduate Project Supervised

### **BS (CS) students**

1. Asim Qamar (1880145), Muhammad Sayyam Khan (1880126), "Diagnosis of Tuberculosis by using Deep Learning Convolutional Neural Network", 2021, SZABIST University, Islamabad Campus.
2. Saqib Amin (1912273), Sajjad Karim (1912272), Zain Habib (1912283) "Diagnosis of Pneumonia by using DL CNN", 2023, SZABIST University, Islamabad Campus.

### **BS (SE) students**

3. Nauman Iftikhar (1812134), Hira Adnan (1812115), "A Robust Scheme for Detection of Lung Diseases Using Deep Learning", 2021, SZABIST University, Islamabad Campus.

## Teaching Interests

- Object Oriented Programming
- Cloud Computing
- Computer Vision
- Artificial Neural Networks
- Digital Logic Design
- Image Processing

## **Research Publications**

Citations: 600+, Impact Factor: 50+

Google Scholar: <https://scholar.google.com.pk/citations?hl=en&user=tqNZBnMAAAAJ>

### **Predictive Analytics Lab research papers:**

- [1] **Ahmed iqbal**, Muhammad Usman, Zohair Ahmed, "An efficient deep learning-based framework for Tuberculosis detection using chest X-ray images", Tuberculosis, (**Impact Factor: 2.973**) <https://doi.org/10.1016/j.tube.2022.102234>
- [2] **Ahmed iqbal**, Muhammad Usman, Zohair Ahmed, "Tuberculosis chest X-ray detection using CNN-based hybrid segmentation and classification approach", Biomedical Signal Processing and Control, (**Impact Factor: 5.076**) <https://doi.org/10.1016/j.bspc.2023.104667>
- [3] **Ahmed iqbal**, Muhammad Usman, Zohair Ahmed, "Rethinking encoder-decoder architecture using Vision Transformer for colorectal polyp and surgical instruments segmentation", Engineering Applications of Artificial Intelligence, (**Impact Factor: 8.000**) (**Under Review**)

### **Ph.D (CS) research papers:**

- [4] **Ahmed iqbal**, Muhammad Sharif, "BTS-ST: Swin Transformer Network for Segmentation and Classification of Multimodality Breast cancer images", Knowledge-Based Systems, (**Impact Factor: 8.139**) <https://doi.org/10.1016/j.knosys.2023.110393>
- [5] **Ahmed iqbal**, Muhammad Sharif, " PDF-UNet: A semi-supervised method for segmentation of breast tumor images using a U-shaped pyramid-dilated network", Expert Systems with Applications, (**Impact Factor: 8.665**) <https://doi.org/10.1016/j.eswa.2023.119718>
- [6] **Ahmed iqbal**, Muhammad Sharif, "Memory-efficient transformer network with feature fusion for breast tumor segmentation and classification task", Engineering Applications of Artificial Intelligence, (**Impact Factor: 8.000**) <https://doi.org/10.1016/j.engappai.2023.107292>
- [7] **Ahmed iqbal**, Muhammad Sharif, "MDA-Net: Multiscale dual attention-based network for segmentation of lesion in breast ultrasound images", Journal of King Saud University - Computer and Information Sciences, (**Impact Factor: 13.473**) <https://doi.org/10.1016/j.jksuci.2021.10.002>
- [8] **Ahmed iqbal**, Muhammad Sharif, Muhammad Attique Khan, Wasif Nisar & Majed Alhaisoni, "FF-UNet: A U-shaped deep convolutional neural network for multimodal biomedical image segmentation", Cognitive Computation, (**Impact Factor: 4.890**) <https://doi.org/10.1007/s12559-022-10038-y>
- [9] **Ahmed iqbal**, Muhammad Sharif, Mussarat Yasmin, Mudassar Raza, Shabib Aftab, "A survey on generative adversarial networks applications in the medical image segmentations", International Journal of Multimedia Information Retrieval, (**Impact Factor: 2.553**) <https://doi.org/10.1007/s13735-022-00240-x>

## **MS (CS) research papers:**

- [10] Mohammad Sh. Daoud, Shabib Aftab, Munir Ahmad, Muhammad Adnan Khan, **Ahmed Iqbal**, Sagheer Abbas, Muhammad Iqbal and Baha Ihnaini "Machine Learning Empowered Software Defect Prediction System", Intelligent Automation and Soft Computing, **(Impact Factor: 1.647)** <http://dx.doi.org/10.32604/iasc.2022.020362>
- [11] **Ahmed Iqbal**, Shabib Aftab, Umair Ali, Zahid Nawaz, Laraib Sana, Munir Ahmad, and Arif Husen, "Performance Analysis of Machine Learning Techniques on Software Defect Prediction using NASA Datasets," International Journal of Advanced Computer Science and Applications, Vol. 10, No. 5, 2019. **(ISI, Scopus Indexed)** <http://dx.doi.org/10.14569/IJACSA.2019.0100538>
- [12] Shabib Aftab, Zahid Nawaz, Faiza Anwer, Munir Ahmad, **Ahmed Iqbal**, and Muhammad Salman Bashir, "Using FDD for Small Project: An Empirical Case Study," International Journal of Advanced Computer Science and Applications, Vol. 10, No. 3, 2019. **(ISI, Scopus Indexed)** <http://dx.doi.org/10.14569/IJACSA.2019.0100319>
- [13] Muhammad Ibrahim, Munir Ahmad Shabib Aftab, **Ahmed Iqbal**, Bilal Shoaib Khan, Muhammad Iqbal, Baha Najim Salman Ihnaini, Noh Sabri Elmitwally, "Presenting and Evaluating Scaled Extreme Programming Process Model," International Journal of Advanced Computer Science and Applications, Vol. 11, No. 11, 2020. **(ISI, Scopus Indexed)** <http://dx.doi.org/10.14569/IJACSA.2020.0111121>
- [14] Muhammad Ibrahim, Shabib Aftab, Birra Bakhtawar, Munir Ahmad, **Ahmed Iqbal**, Nauman Aziz, Muhammad Sheraz Javeid, Baha Najim Salman Ihnaini, "Exploring the Agile Family: A Survey" IJCSNS International Journal of Computer Science and Network Security, Vol. 20, No. 10, PP. 163–179, 2020. **(ISI, Scopus Indexed)** <http://dx.doi.org/10.22937/IJCSNS.2020.20.10.22>
- [15] **Ahmed Iqbal** and Shabib Aftab, "A Feed-Forward and Pattern Recognition ANN Model for Network Intrusion Detection," International Journal of Computer Network and Information Security, Vol. 11, No. 4, PP. 19–25, 2019. **(ISI, Scopus Indexed)** <http://dx.doi.org/10.5815/ijcnis.2019.04.03>
- [16] **Ahmed Iqbal**, Shabib Aftab, Israr Ullah, Muhammad Anwaar Saeed, and Arif Husen, "A Classification Framework to Detect DoS Attacks," International Journal of Computer Network and Information Security, Vol. 11, No. 9, PP. 40–47, 2019. **(ISI, Scopus Indexed)** <http://dx.doi.org/10.5815/ijcnis.2019.09.05>
- [17] **Ahmed Iqbal**, Shabib Aftab, Israr Ullah, Muhammad Salman Bashir, and Muhammad Anwaar Saeed, "A Feature Selection based Ensemble Classification Framework for Software Defect Prediction," International Journal of Modern Education and Computer Science, Vol. 11, No. 9, PP. 54–64, 2019. **(ISI, Scopus Indexed)** <http://dx.doi.org/10.5815/ijmecs.2019.09.06>
- [18] **Ahmed Iqbal**, Shabib Aftab, and Faseeha Matloob, "Performance Analysis of Resampling Techniques on Class Imbalance Issue in Software Defect Prediction," International Journal of Information Technology and Computer Science, Vol. 11, No. 11, PP. 44–53, 2019. **(ISI, Scopus Indexed)** <http://dx.doi.org/10.5815/ijitcs.2019.11.05>
- [19] **Ahmed Iqbal**, and Shabib Aftab, "A Classification Framework for Software Defect Prediction using Multi-Filter Feature Selection Technique and MLP," International Journal of Modern Education and Computer Science, Vol. 12, No. 1, PP. 18–25, 2020. **(ISI, Scopus Indexed)** <http://dx.doi.org/10.5815/ijmecs.2020.01.03>

- [20] **Ahmed Iqbal**, and Shabib Aftab, "Prediction of Defect Prone Software Modules using MLP based Ensemble Techniques," International Journal of Information Technology and Computer Science, Vol. 12, No. 1, PP. 18–25, 2020. **(ISI, Scopus Indexed)** <http://dx.doi.org/10.5815/ijitcs.2020.03.04>
- [21] Faseeha Matloob, Shabib Aftab, and **Ahmed Iqbal**, "A Framework for Software Defect Prediction using Feature Selection and Ensemble Learning Techniques," International Journal of Modern Education and Computer Science, Vol. 11, No. 12, PP. 1–7, 2019. **(ISI, Scopus Indexed)** <http://dx.doi.org/10.5815/ijmeecs.2019.12.01>
- [22] Umair Ali, Shabib Aftab, **Ahmed Iqbal**, Zahid Nawaz, Muhammad Salman Bashir, Muhammad Anwaar Saeed, "Software Defect Prediction Using Variant based Ensemble Learning and Feature Selection Techniques," International Journal of Modern Education and Computer Science, Vol. 12, No. 5, PP. 29–40, 2020. **(ISI, Scopus Indexed)** <http://dx.doi.org/10.5815/ijmeecs.2020.05.03>

### **Active Reviewer**

- Computer Methods in Biomechanics and Biomedical Engineerings
- Computer Systems Science and Engineering - Tech Science Press
- IEEE Transactions on Neural Networks and Learning Systems
- Engineering Applications of Artificial Intelligence - Elsevier
- Computers, Materials & Continua - Tech Science Press
- International Journal of Intelligent Systems - Hindawi
- Human-centric Computing and Information Sciences
- Computers and Electrical Engineering – Elsevier
- BMC Medical Informatics And Decision Making
- Signal, Image And Video Processing - Springer
- Journal of Biomedical and Health Informatics
- Journal of Cognitive Computation - Springer
- Machine Vision and Applications - Springer
- Alexandria Engineering Journal - Elsevier
- Complex & Intelligent Systems - Springer
- Artificial Intelligence Review - Springer
- Discover Applied Sciences - Springer
- Knowledge-Based Systems - Elsevier
- Journal of Digital Imaging - Springer
- Applied Soft Computing - Elsevier
- The Visual Computer - Springer
- Digital Health - Sage Journals
- Multimedia Systems - Springer
- Cluster Computing - Springer
- Scientific Reports - Nature
- Cancer Medicine - Wiley
- IEEE Network Magazine
- Brain-X - Wiley Journal
- PLOS ONE

## Programming Skills

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<b>Programming</b> <ul style="list-style-type: none"><li>Python (Django, TensorFlow, PyTorch, Scikit-learn, NumPy, Pandas, Matplotlib, Seaborn, OpenCV)</li><li>PHP (CodeIgniter framework, WordPress, Joomla)</li><li>MATLAB (Computer vision, Image pre-processing, and Machine learning)</li></ul>	<b>Data Science</b> <ul style="list-style-type: none"><li>Probability &amp; statistics</li><li>Complex algorithm analysis</li><li>Feature selection &amp; reduction</li><li>Data visualization using Highcharts</li><li>Machine learning</li><li>Deep learning</li><li>Computer vision</li></ul>
<b>Front-end</b> HTML, CSS, JavaScript, jQuery, AJAX, Bootstrap	<b>Databases</b> MySQL, PostgreSQL, MS SQL Server

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## Diploma and Certifications

- 2011 PHP Developer, Expert Rating (*Online Certification*)
- 2009 HTML Developer, W3Schools (*Online Certification*)
- 2004 Diploma in Graphic Design, Quaid-e-Azam College of Computer Science

## Achievement and Records

- Organizer of ZAB AI CUP 2023
- Active reviewer of various IEEE Transactions, and Q1 Journals
- Jamia Akbaria - Islamic Quiz competition winner - 2005
- Travel Abroad: *Thailand, Malaysia, Singapore, and Saudi Arabia*

## References

- [1] Prof. Dr. Muhammad Sharif (Full Professor)      Computer Science Department, COMSATS University, Islamabad  
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- [2] Dr. Jawad Hussain (Associate Professor)      Department of Computer Science, Sir Syed CASE Institute of  
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- [3] Dr. Mudassar Raza (Associate Professor)      Department of Computer Science, HITEC University, Taxila  
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- [4] Dr. Shabib Aftab (Assistant Professor)      Faculty of Computer Science & Information Technology,  
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I hereby declare that the above furnished information is true and correct to the best of my knowledge.