



## DR. ARSHAD IQBAL, PHD

Machine Learning Researcher | Medical AI Scientist | Citation  
Intelligence Researcher | Computer Vision Researcher | NLP  
Researcher | Explainable AI Specialist



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**GitHub:** Arshad-Iqbal-Khattak



Pakistan

## PROFESSIONAL SUMMARY

PhD in Computer Science with **12+ years** of experience in Artificial Intelligence, Machine Learning, Deep Learning, Medical Image Analysis, Computer Vision, Explainable AI (XAI), Natural Language Processing (NLP), Citation Analysis, and Healthcare Analytics. Published research in IEEE Access, PLOS ONE, and other peer-reviewed journals. Experienced in developing AI-driven solutions using TensorFlow, PyTorch, Transformers, BERT, and SciBERT, with expertise in Medical AI, Multimodal Learning, and Intelligent Decision Support System.

## RESEARCH INTERESTS

Machine Learning, Deep Learning, Medical Image Analysis, Computer Vision, Explainable AI, Healthcare AI, Citation Analysis, NLP, Large Language Models, Multimodal Learning, Career Recommendation Systems.

## TECHNICAL SKILLS

### Programming/Scripting Languages:

Java, Python, PHP, C++, HTML, CSS, JavaScript

**NLP & LLM Tools:** Word2Vec, GloVe, FastText, BERT, SciBERT, Transformers, Hugging Face Library, LSTM, GRU, CNN for Text Classification, PyTorch, TensorFlow, Keras, NLTK, Scikit-learn, OpenCV, YOLO

**Database:** SQL, SQL Server, MySQL, Oracle

**Tools & Platforms:** GitHub, LaTeX, Mendeley, Zotero, Kaggle, Google Colab

**Specialized:** Explainable AI (Grad-CAM), Multimodal Learning, Medical Image Analysis

## PROFESSIONAL EXPERIENCE

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### Lecturer of Computer Science

01/11/2016 – 29/12/2024

#### Khushal Khan Khattak University Karak

- Delivered undergraduate and postgraduate courses in Artificial Intelligence, Machine Learning, Database Systems, Python Programming, Object-Oriented Programming, Web Technologies, and Software Engineering.
- Supervised and co-supervised student research projects in Machine Learning, Deep Learning, Medical Image Analysis, and Data Science.
- Designed outcome-based curricula, laboratory exercises, and assessment strategies aligned with modern computing education standards.
- Mentored students in research methodology, scientific writing, and project development.
- Contributed to curriculum revision and departmental academic quality enhancement initiatives.

### Lecturer of Computer Science

01/04/2013 – 25/10/2016

#### The Leaders College, Rawalpindi, Pakistan

- Taught computer science subjects to students at both FSC and BS levels, fostering a deep understanding of fundamental concepts and practical applications.
- Developed and delivered engaging lesson plans that catered to diverse learning styles, promoting active participation and critical thinking among students.
- Worked as a Lab Supervisor, maintaining lab systems and ensuring a conducive environment for hands-on learning.
- Conducted evening short courses in Python programming and web development, providing additional learning opportunities for students.

### Lecturer of Computer Science

01/01/2012 – 27/03/2013

#### Khyber Science Degree College, Karak

- Delivered engaging lectures to groups of students, utilizing advanced teaching techniques to inspire and motivate them towards pursuing higher-level qualifications and successful employment.
- Organized, implemented, and monitored academic programs and assessments, ensuring alignment with educational standards and learning objectives.
- Responsible for preparing comprehensive learning materials for courses and advising on relevant practical activities to enhance student understanding and application of theoretical concepts.

## RESEARCH EXPERIENCE

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**PhD Research:** Exploiting Contextual Word Embedding for Important Citation Identification.

**Medical AI:** Diabetic Retinopathy Detection, Multimodal Learning, Grad-CAM Explainability.

**Healthcare Analytics:** Parkinson's disease Freezing-of-Gait Prediction using Deep Learning (WaveNet).

- Contributed to model development, experimental analysis, manuscript preparation, and scientific dissemination in collaboration with international researchers and the King Salman Center for Disability Research.

Career Recommendation Systems using Machine Learning.

## SELECTED PUBLICATIONS

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**A.** Iqbal, A., Shahid, A., Roman, M., Afzal, M. T., & Yahya, M. (2023). "Exploiting Contextual Word Embedding for Identification of Important Citations: Incorporating Section-Wise Citation Counts and Metadata Features," in *IEEE Access*, vol. 11, pp. 114044-114060. DOI: 10.1109/ACCESS.2023.3320038

**B.** Iqbal, A., Shahid, A., Roman, M., Afzal, M. T., & Hassan, U. U. (2025). Optimizing window size of semantic classification model for identification of in-text citations based on context and intent. *PLOS ONE*.

**C.** Iqbal, A., Haq, M. I. U., Wahid, A., Muhammad, S., Yahya, M., & Shahid, A. (2026). SciBERT-Based Interpretable Framework for Citation Influence Classification using Sparse Rationale Extraction. *IEEE Access*.

**D.** Al-Adhaileh, M. H., Iqbal, A., Aldhyan, T. H., Uddin, M. I., & Al-nefaie, A. H. (2025). A WaveNet Deep Learning Framework for Real-Time FoG Prediction in Patients with Parkinson's disease. *Journal of Disability Research*, 4(5).

**E.** Basit, A., Khan, Z. A., Rehman, I., & Iqbal, A. (2024). Analyzing how Social Media Platforms, driven by AI, can serve as Spaces for Teachers' Professional Development by Facilitating Networking, Knowledge Sharing, and Real-time Collaboration. *Review of Applied Management and Social Sciences*, 7(4), 849-863.

**F.** Akhtar, E. D. S., Khan, I., Jumani, A., Talpur, M. R. H., Iqbal, A., & Rafique, A. A. (2025). Advancing Multi-Modal Machine Learning in Smart Environments: Integrating Visual, Auditory, and Sensorial Data for Context-Aware Human-AI Interaction. *Annual Methodological Archive Research Review*, 3(6), 26-47.

**G.** Abdullah, H., Tariq, A., Iqbal, R., & Khan, F. (2025). Recurrent Neural Networks in Time-Series Forecasting: A Deep Learning Approach to Stock Market Prediction. *Annual Methodological Archive Research Review*, 3(6), 72-101.

**H.** Khan, M. U., Shahid, M. T., Ashraf, M., Riaz, M., Rahman, U., & Iqbal, A. (2025). Financial Fraud Detection with AI: A Machine Learning-Based Approach for Securing Digital Transactions. *Global Research Journal of Natural Science and Technology*.

## STUDENTS SUPERVISED (CO-SUPERVISOR)

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- Miss Hadia: Climate Impact Assessment Using Machine Learning Techniques.
- Mr. Adnan: Deep Learning-Based Analysis of Drug Addiction Patterns in District Karak.

- Mr. Muhammad Afnan: Diabetic Retinopathy Detection Using Preprocessed Fundus Images with the Inception-V3 Model.

## CONFERENCES & REVIEWS

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- Participated as a Presenter in a 2-Day Conference on Advanced Computational Intelligence Methods and Their Applications, organized by Kohat University of Science & Technology.
- Acted as a Reviewer for the International Conference on Advancements in Computational Sciences, 2024, organized by the Faculty of Information Technology, The University of Lahore.
- Delivered a Keynote Address at the 3rd International Conference on Computational Intelligent Systems 2024, hosted by Kohat University of Science and Technology.
- Acted as a Reviewer for the International Conference on Advancements in Computational Sciences, 2024, organized by the Faculty of Information Technology, The University of Lahore.
- Reviewed manuscripts for Journal of Advances in Information Technology and PLOS ONE.

## PROJECT EXPERIENCE

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- Built a CNN model to classify handwritten digits from the MNIST dataset. Gained practical experience in computer vision, deep learning, and model evaluation. Achieved high accuracy through effective preprocessing and model tuning. **GitHub:** [Link](#)
- Developed a model to detect freezing of gait episodes in Parkinson's disease patients using sensor or movement data. Achieved high precision and accuracy. **GitHub:** [Link](#)
- Developed a sentiment analysis model to classify movie reviews as positive or negative using NLP and Deep Learning. **GitHub:** [Link](#)
- Built a CNN-based model to classify images of cats and dogs. Applied data augmentation techniques.
- Built a text classification model to identify real and fake news articles using NLP techniques.
- Designed and implemented a comprehensive database system for Avon Super Market inventory management.
- Developed and maintained the official website for ADF.
- Created a robust database as part of Bachelor's project for hospital patient data management.
- Worked in the computerization project for the Arms License, Home department Government of KPK.

## EDUCATION

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- **Ph.D.in Computer Science (2024)**

Kohat University of Science & Technology, Kohat

***Thesis:** Exploiting Contextual Word Embedding for Identification of Important Citations*

- **MS in Computer Science (2018)**

Pir Mehr Ali Shah Arid Agriculture University

***Thesis:** Decision Support System in Career Counselling: Technology Identification*

- **BS in Computer Science (2011)**

University of Peshawar, Peshawar

***Focus:** Database Management System*

## PROFESSIONAL EDUCATION

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- B.Ed (2013) – Allama Iqbal Open University
- CT (2016) – Allama Iqbal Open University

## CERTIFICATES & ACHIEVEMENTS

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- Awarded a certificate by the District Administration in 2019 for efficient performance during inspection duties for Kohat Board examinations.
- Secured first position in the programming competition organized by the Department of Computer Science, University of Peshawar.
- Received a certificate from the Deputy Commissioner Karak in 2019 for outstanding efforts in successfully organizing the event "Jashn-e-Bahara Karak Rangoona".

## INTERNSHIP

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**CodexcuPak Software House** —

Mar 2025 – May 2025

- Successfully completed a deep learning internship focusing on cutting-edge projects involving Large Language Models (LLMs).
- Gained hands-on experience in developing and optimizing deep learning models for real-world applications.
- Collaborated with a team of professionals to research, fine-tune, and deploy LLM-based solutions.

## REFERENCES

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- **Dr. Abdul Shahid**, Assistant Professor, South East Technological University (SETU), Waterford  
Email: Abdul.Shahid@setu.ie | Cell: +353 899 527 835
- **Dr. Muhammad Taniver Afzal**, Professor, Shifa Tameer-e-Millat University, Islamabad  
Cell: +92 300 601 3823
- **Dr. Muhammad Inam Ul Haq**, Assistant Professor & HOD (CS), Khushal Khan Khattak University  
Karak  
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