Dr. Muhammad Sharif

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AREA OF INTEREST

- Artificial Intelligence
- Machine Learning
- Decentralized Cooperative Learning
- Computer Vision and Multimedia
- Evolutionary Computation
- Deep Learning
- Big data analytics, and the IOT
- Medical Image Processing

EXPERIENCE

Assistant Professor (07/02/2022 -Till Now)
Department | Computer Science
School | COMSATS University Islamabad

Lecturer (23/02/2015-06/02/2022)
Department | Computer Science
School | COMSATS University Islamabad

Lecturer (17/04/2014-20/09/2014)
Department | Computer Science
School | University of Lahore, Sargodha Campus

Research Scientist (01/01/2013-31/12/2013)
Lab | Signal and Image Processing
Department | Department of Mechatronics
School | Gwangju Institute of Science and Technology, South Korea

Research Assistant (Outsource) 2012
Project | Breast Cancer Detection
School | King Saud University, Saudi Arabia

Bachelor of Education (BED) 2006-2007
School | Allama Iqbal Open University (AIOU), Islamabad, Pakistan

Session Chair 2010
Conference | ICSI2010 Research Conference at Beijing in China, 2010

EDUCATION

PhD in Computer Science 2018
Thesis Title | Rician Noise Removal in MR Images
School | National University of Computer & Emerging Sciences, FAST Islamabad, Pakistan

Post Graduate Program (MS) in Computer Science 2009
MS Thesis Title | Ultrasound Image Segmentation using Fuzzy Morphology
School | National University of Computer & Emerging Sciences, FAST Islamabad, Pakistan

Graduate Honor (MSc) Program in Computer Science 2006
School | Kohat University of Science & Technology, Pakistan

Graduate (BSc) Program in Computer Science 2003
School | University of Peshawar, Pakistan

Undergraduate Program in Pre-Engineering 2000
School | BISE Peshawar, Pakistan

PUBLICATIONS

Journal Papers

1. Muhammad Umer, Muhammad Tahir, Muhammad Sardaraz, **Muhammad Sharif**, Hela Elmannai, and Abeer D. Algarni, "Network Intrusion Detection Model using Wrapper Based Feature Selection and Multi Head Attention Transformers", Volume 15, Issue 1, Pages 28718, International Journal of Scientific Reports, 06 August 2025, ISSN: 2045-2322 (online), DOI: https://doi.org/10.1038/s41598-025-11348-5, Impact Factor 3.9, Citations -.
2. Areeba Naseem Khan, Mohsin Bilal, Sajid Ullah Khan, Salabat Khan, and **Muhammad Sharif**, "Innovative MRI Denoising Using Federated and Transfer Learning", Volume 10, Issue 3, Pages e70106, International Journal of Imaging Systems and Technology (IMA), Wiley, 07 May 2025, ISSN: 0899-9457, eISSN: 1098-1098, DOI: https://doi.org/10.1002/ima.70106, Impact Factor 3, Citations -.
3. Sidra Mehboob, Maryam Bukhari, Yaser Ali Shah, Salabat Khan, and **Muhammad Sharif**, "Enhanced Skin Cancer Classification with MobileNetV3 and Morphological Preprocessing: A Deep Learning-Based Extension", Volume 07, Special Issue, Pages 1-12, International Journal of Innovations in Science & Technology (IJIST), 04 May 2025, URL: https://journal.50sea.com/index.php/IJIST/article/view/1349.
4. Fariha Nosheen, Salabat Khan, **Muhammad Sharif**, Do Hyeun Kim, Reem Alkanhel, and Nagwan AbdelSamee, "Breakthrough in breast tumor detection and diagnosis: a noise-resilient, rotation-invariant framework", Pages 1-27, Multimedia Tools and Applications, Springer, 14 January 2025, ISSN: 1380-7501 (Print), 1573-7721 (Online), DOI: https://doi.org/10.1007/s11042-024-20539-7, Impact Factor 3, Citations -.
5. Shanza Zafar Malik, Khalid Iqbal, **Muhammad Sharif,** Yaser Ali Shah, Amaad Khalil, M. Abeer Irfan and Joanna Rosak-Szyrocka, "Attention-aware with stacked embedding for sentiment analysis of student feedback through deep learning techniques", Volume 10, Pages e2283, PeerJ Computer Science, 02 September 2024, ISSN: 2376-5992 (Print), 2376-5992 (Online), DOI: https://doi.org/10.7717/peerj-cs.2283, Impact Factor 3.8, Citations 1.
6. Abid Ali, **Muhammad Sharif,** Muhammad Shahzad Faisal, Atif Rizwan, Ghada Atteia, and Maali AlAbdulHafith , "Brain Tumor Segmentation using Generative Adversarial Networks", Volume 12, Pages 183525-183541, IEEE Access, 27 August 2024, ISSN: 2169-3536 (Print), 2169-3536 (Online), DOI: https://doi.org/10.1109/ACCESS.2024.3450593, Impact Factor 3.9, Citations -.
7. Nagwan Abdel Samee, Umair Khan, Salabat Khan, Mona M. Jamjoom, **Muhammad Sharif**, and Do Hyuen Kim, "Safeguarding Online Spaces: A Powerful Fusion of Federated Learning, Word Embeddings, and Emotional Features for Cyberbullying Detection", Volume 11, Pages 124524-124541, IEEE Access, 02 November 2023, ISSN: 2169-3536 (Print), 2169-3536 (Online), DOI: https://doi.org/10.1109/ACCESS.2023.3329347, Impact Factor 3.9, Citations 4.
8. **Muhammad Sharif**, Ayyaz Hussain, Muhammad Arfan Jaffar, and Tae-Sun Choi, "Fuzzy-based hybrid filter for Rician noise removal", Volume 10, Issue 2, Pages 215–224, Signal, Image, and Video Processing (SIVP), Springer Journal, February 2016, ISSN: 1863-1703 (Print) 1863-1711 (Online), DOI: https://doi.org/10.1007/s11760-014-0729-1, Impact Factor 1.583, Citations 28.
9. **Muhammad Sharif**, Muhammad Arfan Jaffar, and Muhammad Tariq Mahmood, "Optimal composite morphological supervised filter for image denoising using genetic programming: Application to magnetic resonance images", Volume 31, Pages 78-89, Engineering Applications of Artificial Intelligence, Elsevier, 01 May 2014, ISSN: 0952-1976, DOI: https://doi.org/10.1016/j.engappai.2013.11.011, Impact Factor 7.802, Citations 19.
10. **Muhammad Sharif**, Ayyaz Hussain, Muhammad Arfan Jaffar, and Tae-Sun Choi, "Fuzzy similarity based non local means filter for rician noise removal", Volume 74, Issue 15, Pages 5533–5556, Multimedia Tools and Applications (MTAP), Springer Journal, 20 February 2014, ISSN: 1380-7501 (Print) 1573-7721 (Online), DOI: https://doi.org/10.1007/s11042-014-1867-8, Impact Factor 2.757, Citations 26.
11. **Muhammad Sharif**, Muhammad Arfan Jaffar, and Muhammad Tariq Mahmood, "Rician noise reduction by combining mathematical morphological operators through genetic programming", Volume 20, Issue 4, Pages 289–292, Optical Review, Springer Journal, 31 July 2013, ISSN: 1340-6000 (Print) - 1349-9432 (Online), DOI: https://doi.org/10.1007/s10043-013-0052-z, Impact Factor 0.805, Citations 6.
12. Salabat Khan, Mohsin Bilal, **Muhammad Sharif**, and Rauf Baig, "Ant N-Queen Solver", Volume 7, Pages 198-207, International Journal of Artificial Intelligence, Indian Society for Development and Environment Research, 01 October 2011, ISSN: 0974-0635 (Online), Link:

http://www.ceser.in/ceserp/index.php/ijai/article/view/2259, Impact Score 3.81, Citation 1.

Conference Papers

1. Sidra Mehboob, Maryam Bukhari, Yaser Ali Shah, Salabat Khan, and **Muhammad Sharif,** "Optimized Skin Cancer Classification through Transfer Learning with MobileNetV3 and Mathematical Morphological Preprocessing", International Conference on Innovations in Computing Technologies and Information Sciences (ICTIS), UET, Peshawar, Pages 266-271, April 2025, Link: https://www.uetpeshawar.edu.pk/ictis/assets/files/ICTIS25_Conference%20Proceedings.pdf
2. Salabat Khan, Anwar Ghani, Syed Shehreyar Ali Naqvi, Murad Ali Khan, Muhammad Faseeh, Do Hyeun Kim, and **Muhammad Sharif**, "Federated Learning for Real-Time Decentralized Smile Detection in Virtual Reality Environments", 2024 IEEE International Conference on Metaverse Computing, Networking, and Applications (MetaCom), Pages 50-56, 2024, DOI: https://doi.org/10.1109/MetaCom62920.2024.00022.
3. **Muhammad Sharif**, Muhammad Arfan Jaffar, and Muhammad Tariq Mahmood, "Genetic Programming based Composite Filter for Rician Noise Reduction", IEEE International Conference on Systems, Man, and Cybernetics (SMC), 13-16 October 2013, ISSN: 1062-922X (Print), Pages 1317-1322, Citation 1, DOI: https://doi.org/10.1109/SMC.2013.228.
4. Salabat Khan, Mohsin Bilal, **Muhammad Sharif,** and Farrukh Aslam Khan, "A Solution to Bipartite Drawing Problem Using Genetic Algorithm", International Conference in Swarm Intelligence, Lecture Notes in Computer Science, Springer, 12-15 June 2011, ISSN: 0302-9743 (Print) 1611-3349 (Web), Volume 6728, Pages 530-538, Citation 6, DOI: https://doi.org/10.1007/978-3-642-21515-5_63.
5. **Muhammad Sharif,** Mohsin Bilal, Salabat Khan, and Muhammad Arfan Jaffar, "Adaptive filter and morphological operators using binary PSO", International Conference on Information Computing and Applications, Lecture Notes in Computer Science, Springer, 15-18 October 2010, ISSN: 0302-9743 (Print) 1611-3349 (Web), Volume 6377, Pages 525-532, Citation 6, DOI: https://doi.org/10.1007/978-3-642-16167-4_67.
6. Mohsin Bilal, **Muhammad Sharif**, Muhammad Arfan Jaffar, Ayyaz Hussain, and Anwar Majeed Mirza, "Image Restoration Using Modified Hopfield Fuzzy Regularization Method". Future Information Technology (FutureTech), 5th International Conference, IEEE, South Korea, 21-23 May 2010, ISSN: 2159-7006 (Print) 2159-7014 (Electronic), Pages 1-6, Citation 6, DOI: https://doi.org/10.1109/FUTURETECH.2010.5482736.
7. Salabat Khan, Mohsin Bilal, **Muhammad Sharif**, Malik Sajid Abbas, and Rauf Baig, "Solution of N-Queen Problem Using ACO", IEEE 13th International Multitopic Conference (INMIC), Islamabad, IEEE, 14-15 December 2009, ISBN: 9781728140018 1728140013, Pages 1-5, Citation 49, DOI: https://doi.org/10.1109/INMIC.2009.5383157.

GRADUATE THESIS SUPERVISED

1. Shilling Attack Detection on Recommender System using Item-Based Collaborative Filtering - Spring2024
2. MR Images Denoising: The Synergy of Federated and Transfer Learning - Spring2024
3. Detection of Breast Cancer in Mammography using Convolutional Neural Network - Spring2024
4. Resource Allocation for Vehicle-to-Vehicle Communication in 5G Networks - Fall2023
5. Prediction of Failure Component for Aircraft using Neural Networks - Fall2023
6. Brain Tumor Segmentation using Generative Adversarial Networks - Spring2023
7. Gender Classification from Handwritten Urdu Text - Spring2023
8. Gender Classification in presence of Functional Challenges - Spring2023
9. Magnetic Resonance Image Denoising using Deep Learning - Spring2023
10. Emotion Recognition for Masked Faces using Deep Learning - Spring2023
11. Apple Disease Detection using Machine Learning – Fall2022
12. Brain Tumor Detection and Classification using Enhanced Deep Learning - Spring2022

GRADUATE THESIS IN PROGRESS

1. Enhancing Vision Transformers on small dataset with Advanced Feature Extraction and Attention Mechanisms
2. Federated Semantic Segmentation for Remote Sensing Imagery

GRADUATE COURSE RESEARCH PROJECTS SUPERVISED

1. Fake News Detection
2. Face Image Manipulation Detection through CNN
3. Smile Detection from an Image using CNN, Tensorflow and Keras
4. Sarcasm Detection
5. Gender Detection on Live Camera using Python Keras and OpenCV
6. Pneumonia Detection in X-ray Images
7. Traffic Sign Detection and Recognition using CNN
8. Face Mask Detection
9. Classifying Severiety of Alzheimer's Disease by Stacking Different Filters using Inception V3
10. Automatic Image Caption Generation
11. Skin Cancer Detection
12. CAPTCHA Solver
13. Tomato Plant Disease Detection using CNN
14. Traffic Sign Classification
15. Garbage Waste Segregation using Deep Learning techniques
16. Sign Language Detection

GRADUATE COURSES TAUGHT

1. Advanced Artificial Neural Networks
2. Deep Learning
3. Machine Learning
4. Special Topics in Machine Learning
5. Advanced Algorithms Analysis
6. Research Methodology
7. Theory of Computation

IGNITE FUNDED UNDERGRADUATE PROJECTS SUPERVISED

1. Computer Aided Diagnostic System for Apple plant based on IoT (NGIRI-2020-5362)
2. Smart Bank Locker based on IoT and IRIS (NGIRI-2020-4762)

UNDERGRADUATE PROJECTS SUPERVISED

1. Faith Sphere AI – Spring2025
2. AI Marketing Agency – Spring2025
3. Virtual Classroom HUB - Spring2025
4. Cybershield App – Spring2025
5. Tableeghi Community Connector – Fall2024
6. Rice Crop Detection – Fall2024
7. Android based Pakistani Sign Language Real Time Urdu Translator and Interpreter - Spring2024
8. The Conquest of Mongolia: The Game - Spring2024
9. Customer Satisfaction through Emotion Recognition – Spring2024
10. Soft Copy Authentication Agent in Online Examination – Fall2023
11. Fresh and Spoiled Food detection – Fall2023
12. Smart Recommendation based Food Conservation System – Fall2023
13. Fire detection through Computer Vision - Spring2023
14. E-Commerce Handicraft Recommendation System - Fall2022
15. COVID19 detection from Chest X-Rays using CNN - Spring2022
16. Forensic Sketch based Face Recognition - Fall2021
17. AI based PDF Document Separator - Fall2021
18. Pet Care - Spring2021
19. Virtual Invigilator - Spring2021
20. Instant Fee Clearance System for CUI Attock - Fall2020
21. Attendance System using Eye Detection - Fall2020
22. Facial Expression Recognition in Live Video - Spring2020
23. Fatigue Recognition in Virtual Classroom - Spring2020
24. Face Recognition (Person of Interest Detector) – Fall2019
25. Death Survival (Game) – Spring2019
26. Resource Hiring Management System – Fall2018
27. CAD System for Apple plant based on ML – Spring2018
28. Smart Bank Locker Security based on IRIS Recognition – Fall2017
29. Home Look-Out – Spring2017

UNDERGRADUATE PROJECTS IN PROGRESS

1. AgriFarm AI – Spring2025
2. Streamlined Tower Defence: Building Defences under Pressure – Spring2025
3. InfraEstate AI – Spring2025
4. - Fall2025
5. Realtime AI debate Coach - Spring2026

UNDERGRADUATE COURSES TAUGHT

1. Deep Learning
2. Machine Learning Fundamentals
3. Machine Learning
4. Computer Vision
5. Computer Graphics
6. Digital Image Processing
7. Multimedia Tools and Applications
8. Automata Theory
9. Introduction to Computers and Technologies
10. Programming Fundamentals
11. Data Structures and Algorithms
12. Object Oriented Programming