

Dr. Khadija Kanwal

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Ph.D (Computer Science)

PROFESSIONAL EXPERIENCE:

- **Serving as an Assistant Professor at the Institute of Computer Science & Information Technology**, teaching undergraduate, graduate, and M.Phil. courses.
 - **Serving as Director of the Institute of Computer Science & Information Technology since June 2015.** Under my leadership, the **BS Computer Science (BSCS)** and **BS Information Technology (BSIT)** programs successfully secured **NCEAC (National Computing Education Accreditation Council), Higher Education Commission (HEC), Islamabad** accreditation on **two occasions, in 2015 and 2023.**
 - **Member, Board of Advanced Studies and Research (BASR), The Women University Multan, since September 2024.**
 - **Serving as Chairperson of the Daycare Centers at The Women University Multan since August 2024.**
 - **Served as Focal Person of Google Certification at The Women University Multan since 2024.**
 - **Served as Focal Person of Multi Purpose Center (MPC) at The Women University Multan since April 2026.**
 - **Served as Focal Person of Roshan Punjab Dashboard at The Women University Multan since May 2026.**
 - **Served as Focal Person for Live session underway organized by HEC at The Women University Multan since June 2026.**
1. (a) Assistant Professor Computer Science (Permanent) (June, 2015-Now),
Institute of Computer Science & IT
The Women University, Multan, Pakistan.

- (b) Lecturer Computer Science (On Contract) (Nov, 2013-June, 2015),
Institute of Computer Science & IT
The Women University, Multan, Pakistan.

Seven years teaching experience to teach graduate and under-graduate classes working as:

2. Lecturer Computer Science (Visiting) (June, 2006-Dec 2013),
Institute of Computing, Computer Science Department
Bahauddin Zakariya University, Multan, Pakistan.

Seven year teaching experience to teach graduate and under-graduate classes working as:

3. Lecturer Computer Science (Visiting) (June, 2006- Dec 2013),
Institute of Computing, Information Technology Department
Bahauddin Zakariya University, Multan, Pakistan.

Six year teaching experience to teach graduate and under-graduate classes working as:

4. Lecturer Computer Science (Visiting) (Jan, 2007- Dec 2013),
Institute of Computing, Telecommunication System Department
Bahauddin Zakariya University, Multan, Pakistan.

Six year teaching experience to teach graduate and under-graduate classes working as:

5. Lecturer Computer Science (Visiting) (June, 2007- Dec 2012),
Center for Advanced Studies in Pure and Applied Mathematics,
Bahauddin Zakariya University, Multan, Pakistan.

EDUCATION:

Degree	Subjects	Passing Year	Marks	Division	Institute
Ph.D (CS)	Computer Science	June 2022	CGPA 3.56/4.0	1 st	University of Science and Technology of China, Hefei, China
MS(CS)	Computer Science	2012	CGPA 3.60/4.0	1 st	Bahauddin Zakariya University, Multan
MCS	Computer Science	2005	CGPA 3.48/4.0	1 st	Bahauddin Zakariya University, Multan
B.Sc.	Math A, Math B, Statistics	2002	629/800	1 st	Govt. Degree College Kutchery Road, Multan
F.Sc.	Maths, Statistics, Economics	2000	699/1100	1 st	Govt. Inter College Chungi #14 ,Multan

Matric	Arts Group	1998	513/850	1 st	Govt. Girls High School Haram Gate ,Multan

ACADEMIC DISTINCTIONS:

- Overall 2nd position in PhD (CS).
- Overall 3rd position in MS (CS).
- Overall 2nd position in Govt. Inter College Chungi #14, Multan.

INTERATIONAL CONFERENCES AND TRAININGS:

- Participated in the **Gender-Responsive AI** Training organized by UN Women, held at Nishat Hotel, Lahore, on 16 July 2026.
- Organized as **Focal Person TechXPO-2026** to showcase projects/products of universities from South Punjab (9 June 2026).
- Organized a workshop titled "**Dive Deep into the Odoo Source Code and Use Python, XML, and PostgreSQL to Create Your Own Odoo Apps**" with UAE Odoo software house (4 June 2026).
- Attended the online webinar "**IEEE Learning & Research for Pakistan Students and Researchers: An Overview of the IEEE Xplore Digital Library**" (15 April 2026).
- Served as **Patron and Focal Person** of the 2nd **International Conference on Artificial Intelligence, Computing and Data Science (AICDS)** at The Women University Multan, Pakistan (25–26 November 2025).
- Organized a seminar titled "**Digital Literacy for Women Empowerment**" in collaboration with **Circle Women Association** (18 November 2025).
- Organized as **Focal Person TechXPO-2025** to showcase projects/products of universities from South Punjab (1 July 2025).
- Organized the **International Sci-Arts Conference** in collaboration with **Evolution (Pvt.) Ltd.** at The Women University Multan, Pakistan (17–18 February 2025).
- Organized **TechXPO-2024** to showcase projects/products of universities from South Punjab (11 July 2024).
- Participated in and co-chaired a technical session at the **ICFSVC International Conference** held at the Institute of Computing, MNS University, Multan (10 December 2024).
- Served as **Patron and Focal Person** of the **1st International Conference on Emerging Trends and Challenges in Artificial Intelligence** at The Women University Multan, Pakistan (9–10 January 2024).
- Attended the **International Conference on Artificial Intelligence: Emerging Trends and Technologies**, organized by MNS University of Agriculture, Multan, Pakistan (29–30 November 2023).

- Attended the **Venture Spark** event organized by MNS University of Agriculture, Multan, Pakistan (29–30 November 2023).
- Attended the **International Conference on Linguistics and Multidisciplinary Research**, organized by the Department of English, The Women University Multan, Pakistan (4–5 December 2023).
- Organized numerous workshops and training programs on **Artificial Intelligence, Computer Vision, Ethical Hacking and Cybersecurity, Amazon Technologies, Computer Graphics, and Freelancing** as Director, Institute of Computer Science and Information Technology, The Women University Multan.
- Served as **Focal Person** for conducting Microsoft Office online certification examinations, facilitating Microsoft certification for numerous students.
- Served on the **Abstract and Paper Review Committee** for the International Conference organized by the Department of Applied Psychology, The Women University Multan (11–13 October 2022).
- Attended the **3rd International Seerah Conference** titled "**Importance of Decent Work and Economic Growth in Sustainable Development of the Country in the Light of Seerat-un-Nabi**" (14–15 November 2023).
- Attended the **2nd International Conferences** organized by the Departments of Physics and MMG, The Women University Multan (2023).
- Attended a training workshop on "**Intellectual Property Rights and Patent Writing**" (2 October 2023).
- Supervised student projects that won prizes at **PHEC National Project Expo** competitions during the last two years.
- Delivered a **Keynote Address** at the International Conference on Information and Communication Research (28 November 2021).
- Successfully completed the **23rd Master Trainers–Faculty Professional Development Program (MT-FPDP)** conducted by the Higher Education Commission (HEC), Islamabad (10 November–31 December 2014).
- Organized, as **Focal Person**, an International Seminar on **Image Processing** at The Women University Multan (28 April 2018).
- **Served as Resource Person and Focal Person for the 1st Indigenous Faculty Professional Development Program (IFPDP) at The Women University Multan (28 December 2015–12 January 2016).**

RESEARCH PUBLICATIONS:

The following research papers have been published:

1. **Khadija Kanwal**, Muhammad Mujahid, Julio Cesar Espinosa, Imran Ashraf, "*LwHM: lightweight hybrid classifier for SDN-attack detection using recursive feature elimination*", *Scientific Reports*, 2026.
2. **Khadija Kanwal**, Syeda Noor-Ul-Ain Bukhari, Ayousha Tahreem, Fariha Zulfiqar, Aiza Shabbir, "*An ANOVA-SMOTE-Based Framework for Multi-Class Autoimmune Disease Classification*", *Computing & Biomedical Informatics*, 2026.
3. **Khadija Kanwal**, Aiza Shabbir, Tahir Abbas Khan, Muhammad Adnan Khan, "*Enhanced visual content retrieval via hierarchical deep fusion of multi-level CNN*

- features: *Enhanced visual content retrieval via hierarchical deep fusion of multi-level CNN features*, The Visual computer, 2026.
4. Muhammad Mujahid, **Khadija Kanwal**, Muhammad Abubakar, Shaha Al-Otaibi, Alex Elyassih & Amjad Rehman, “*Smart Diagnosis of Cholangiocarcinoma from Microscopic Images Using a Modified Visual Geometry Group Network with Adaptive Augmentation*”, International Journal of Computational Intelligence Systems, 2025.
 5. Aiza Shabir, Khawaja Tehseen Ahmed, **Khadija Kanwal**, Arif Mehmood, Nagwan Abdel Samee, Muhammad Tahir Naseem & Imran Ashraf, “*Advanced multilevel feature fusion framework for enhanced image retrieval using convolutional neural network and benchmark datasets*”, Journal of Big Data, 2025.
 6. Fatima Bukhari, **Khadija Kanwal** et al. “*Automated Detection of Gallstone Disease Using Machine Learning Techniques: A Data-Driven Approach*”, Spectrum of Engineering Sciences , 2025.
 7. Rahman shafique, **Khadija Kanwal**, furqan rustum, gaysung Choi ya, “*Fusing MFCC and CQT Features for Railway Track Faults Detection*”, Scientific Reports, 2025.
 8. **Khadija Kanwal**, Fatima Bukhari et al." *The Improving Classification Accuracy On Breast Histopathology Images Dataset Using Transfer Learning*", Journal of Computer Science and Information Technology, 2025.
 9. **Khadija Kanwal**, Khawaja Tehseen Ahmad, Naeem Ali, Rashid Khan, Muzz-din, Aliya Abbasi, Aeza Shabir, Li Jing, Elsevier Journals with title” *Deep Image Sensing & Architectural Bonding, Signature Influencing, Datasets Harmonizing and Algorithmic Channelizing Impact on Complex CNN Structures*”. (Scientific Reports) (2025).
 10. Fatima Bukhari, Hafiza Iqra Younas, Aiza shabir, Muzaffar Hameed, Meherwar Fatima, Sehrish Raza , **Khadija Kanwal***, “*Automated Detection of Celiac Disease Using Machine Learning Algorithms*”, Spectrum of Engineering Sciences, 2025.
 11. **Khadija Kanwal**, Iqra Batool et al., “*Automated Detection of Gallstone Disease Using Machine Learning Techniques: A Data-Driven Approach*”, journal of statistics, computing and interdisciplinary research, 2025.
 12. Rabia Javed, Tahir Abbas, Tariq Shahzad , **Khadija Kanwal**, Sadaqat Ali Ramay, Muhammad Adnan Khan , Khmaies Ouahada,” *Enhancing Chronic Disease Prediction in IoMT-Enabled Healthcare 5.0 Using Deep Machine Learning: Alzheimer’s Disease as a Case Study*”, IEEE ACCESS, Jan 2025.
 13. Fatima Bukhari, **Khadija Kanwal** et al. “*The improving classification accuracy on breast histopathology images dataset using transfer learning*”, Journal of Computer Science and Information Technology, 2025
 14. Aiza Shabir, Khawaja Tehseen ahmed, Muhammad Mujahid, **Khadija Kanwal**, “*LWFDL: lightweight fusion deep transfer learning for oral Squamous cell Carcinoma diagnosis using Histopathological oral Mucosa*”, Multimedia Tools and Applications, 2024.
 15. Aiza Shabir, Khawaja Tehseen Ahmad, **Khadija Kanwal**, Tahir Abbas,” *A Systematic Review of Attention Models in Natural Language Processing*”, statistics computing and interdisciplinary research, 2024.
 16. Muhammad Mujahid, Abubakar, **Khadija Kanwal**, Sajid Iqbal , Nabeel Asghar , Abdullah Alaulamie,” *StutterNet: Stuttering Disfluencies Detection in Synthetic*

- Speech Signals via Mel Frequency Cepstral Coefficients Features using Deep Learning*", IEEE ACCESS, 2024.
17. Punit Gupta, Furqan Rustam, **Khadija Kanwal**, Wajdi Aljedaani, Sultan Alfarhood, Mejdl Safran, Imran Ashraf, "*Detecting Thyroid Disease Using Optimized Machine Learning Model Based on Differential Evolution*", (IF=2.9), International Journal of Computational Intelligence Systems, 2024.
 18. **Khadija Kanwal**, Furqan Rustam, Rajeskhar Chaganti, Isabel De La Torre Diez, Juan Luis Vidal, Mazon, Carmen Lili Rodriguez, Imran Ashraf, "*Smartphone Inertial Measurement Unit Data Features for Analyzing Driver Driving Behavior*", IEEE Sensor, 2023.
 19. Muhammad Mujahid, **Khadija Kanwal**, Furqan Rustam, Imran Ashraf, "*Arabic ChatGPT Tweets Classification using RoBERTa and BERT Ensemble Model*", ACM Transactions on Asian and Low-Resource Language Information Processing, 2023.
 20. **Khadija Kanwal**, Muhammad Abubakar, *et al*," *Effective Deep Ensemble Methods for the Detection of Lung Cancer with SMOTE*", Research Jornal, 2024.
 21. **Khadija Kanwal**, Muhammad Mujahid, Aiza Shabir, Sehrish Raza, Meherwar Fatima, Fatima Bukhari," *A Novel Ensemble Framework for Breast Cancer Detection using Ultrasound Imaging and Advance Augmentation Techniques*", 2024
 22. Aiza Shabir, **Khadija Kanwal**, Hareem Ayesha, Afshan Almas, Sehrish Raza, Saroosh Jaffar, "*A hybrid Radio Congnitive Reporting Scheme for Wireless RegionalArea Network*", Journal of computing and biomedical informatics, 2024.
 23. Sadia Saleem, Muhammad Sarfraz, **Khadija Kanwal**, Afshan Almas, "*Artificial Intelligence-based Energy Management System for Energy-Efficient Buildings*", Conference paper, 2024.
 24. Sadaqat Ali, **Khadija Kanwal**, Hasnain, M. Irfan, Tahir Abbas," *Enhancing Fruit Quality Detection With Deep Learning Models*", Journal of Computing and Biomedical Informatics, 2024.
 25. **Khadija Kanwal**, Khawaja Tehseen Ahmad, Rashid Khan, Aliya Abbasi, Li Jing, *Deep Learning Using Symmetry, FAST Scores, Shape-Based Filtering and Spatial Mapping Integrated with CNN for Large Scale Image Retrieval*", Symmetry, 2020. 12(4): p. 612.
 26. **Khadija Kanwal**, Khawaja Tehseen Ahmad, Rashid Khan, Naji Alhussaini, Li Jing, *Deep Learning Using Isotroping, Laplacing, Eigenvalues Interpolative Binding, and Convolved Determinants with Normed Mapping for Large-Scale Image Retrieval*. (IF=3.84) Sensors, 2021. 21(4): p. 1139.
 27. Fatima Bukhari, Shaiasta Ilyas, Laiba, **Khadija Kanwal**, Nadeem Kajla," *Blockchain and Big data to Revolutionize Archaeological Photogrammetry (AP): A safe and Effective method*", Journal of Computing and Biomedical Informatics, 2023.
 28. Rashid Khan, M.S.Islam, **Khadija Kanwal**, M.Iqbal, M.I.Hossain, Z.Ye," *Attention-based Sequence-to-Sequence Framework for Auto Image Caption Generation.*" Journal of Intelligent and Fuzzy systems, 2022
 29. Fatima Bukhari, Shaista Ilyas, Laiba Rehman, Humera Batool, **Khadija Kanwal**, Nadeem Iqbal Kajla, "*Blockchain and Big Data to Revolutionize Archaeological Photogrammetry (AP): A Safe and Effective Method*", Computing & Biomedical Informatics, 2023.
 30. Rashid Khan, Furqan Rustam, **Khadija Kanwal**, Arif Mehmood, and Gyu Sang Choi." *US Based COVID-19 Tweets Sentiment Analysis Using TextBlob and*

- Supervised Machine Learning Algorithm*’s. In 2021 International Conference on Artificial Intelligence (ICAI) (pp. 1-8). IEEE.
31. M Mathan Islam, Shamsa Kanwal, Khush Bakht, **Khadija Kanwal**, Rashid Khan, “*Data-Driven Decision Support System: A Business Intelligence Approach*”, 2020.
 32. Saida Harguem, Sunita Marwaha, Samar Noaman, Naeem Ali, Nasir Ali, **Khadija Kanwal** “*Influencing Factors of E-Learning Towards E-Learner's Satisfaction*”, IEEE Conference, 2022.

RESEARCH THESIS

- My ph.D research thesis title is “**Research on Large-scale Complex Image Retrieval Algorithms Based on CNNs**”.
- My research thesis of MS(CS) was on “**A Systematic Review of Automated Software Fault Tolerance Techniques**”.

RESEARCH PROJECTS/ACHIEVEMENTS

- Approved PhD Supervisor (since July 2025).
- Developed the project "Soil Fertility Monitor & Crops Care Guide," which secured First Position in the South Punjab Artificial Intelligence Advancement Exhibition and Seminar, held on 7th November 2024 under the Higher Education Department (HED).
- Developed the project "A Multi Lingual Multimodal Cardiac Diagnostic System", which secured Third Position at TechXpo 2026, organized by Multan University of Science and Technology (MUST).
- Developed the project "PixelGaurd: Forensic Analysis of Image Tempering and DeepFake Content", which secured First Position at TechXpo 2026, organized by The Womenu University Multan.

RESEARCH:

FIELDS OF RESEARCH INTEREST:

- Computer Vision
- Object Recognition
- Text Recognition
- Features Extraction
- Machine Learning
- Deep Learning
- Medical image processing
- Image Processing and Pattern Recognition
- CBIR

COURSES TAUGHT:

Courses taught by me include HCI, Artificial Intelligence, Machine Learning, and Designs, Discrete Mathematics, Data Structures and Algorithms, Compilers, Database Systems, Distributed Database Systems, MATLAB, Python, Multimedia Systems, Numerical Computing, Computer Organization & Assembly, Computer Architecture, Mathematica, Maple, Software Engineering, Operating System, Web Programming, Programming Languages such as C++ programming, Java Programming, Visual Basic, and Visual C++, Computer Networks, Network Security.

CERTIFICATION/ PROFESSIONAL DEVELOPMENT:

Successfully completed the following **Google-certified courses**:

- Accelerate Your Job Search with AI
- AI for App Building
- AI for Content Creation
- AI for Data Analysis
- AI for Research and Insights
- Coursera Certified Admin
- AI for Writing and Communicating
- Google Agile Essentials
- Foundations of Agile Project Management
- Organize Projects and Measure Productivity with Scrum
- Implement the Scrum Framework
- Artificial intelligence
- Analyze Data to Answer Questions
- Ask Questions to Make Data-Driven Decisions
- Connect and Protect Networks and Network Devices
- Data Analysis with R Programming
- Discover Art of Prompting
- Foundation of Cyber Security
- Foundation of Data Analytics
- Foundation of Digital Marketing
- Google AI Essentials
- Google Data Analytics Capstone
- Manage Security Risks
- Maximize Productivity with AI Tools

- Prepare Data for Exploration
- Process Data from Dirty to Clean
- Share Data through the Art of Visualization
- Stay Ahead of AI Curve
- Use AI Responsibly

LANGUAGES KNOWN:

English, Chinese, Urdu, Punjabi.

SPECIAL SKILLS:

Computer Skills in MATLAB, Python, C++, Rapid Minner, VC++, VB, Weka, Java, Networking, Computer Graphics, WINDOWS, LINUX, Solaris, UNIX, MS-OFFICE, DOS.

REFERENCES:

1. Prof. Dr. Minhaj Ahmad
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