Dr. Shujaat Ali



Assistant Professor
Bacha Khan University, Charsadda, Pakistan

Academic Curriculum Vitae | 2013–Present

House No. 5, Jehangir Abad, University Road, Peshawar, Pakistan
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Professional Profile

Results-driven IT professional and Computer Science PhD with more than 25 years of experience in university teaching, research supervision, academic leadership, network infrastructure design, and technical consultancy. Demonstrated expertise in enterprise networking, optical-fibre and wireless infrastructure, Linux and Windows server environments, institutional IT planning, LaTeX-based academic publishing, and AI-enabled research support. Experienced in leading multidisciplinary teams, managing university-wide digital systems, and translating technical requirements into practical institutional solutions.

Current Academic Appointment

Assistant Professor **2013–Present**
Bacha Khan University, Charsadda, Pakistan

Education

PhD in Computer Science **2024**
International Islamic University, Islamabad, Pakistan

M.S. in Computer Science (Networking) **2010**
NWFP Agricultural University, Peshawar, Pakistan

B.E. in Electronics (Telecommunication) **1999**
NED University of Engineering & Technology, Karachi, Pakistan

Professional Experience

Assistant Professor **2013–Present**
Bacha Khan University, Charsadda, Pakistan

- Teach networking, GIS, and AI-related courses to B.S. and M.S. students.
- Supervise M.S. Computer Science students in research proposal development, project planning, and execution.
- Designed and implemented campus-wide optical-fibre and wireless networks.
- Established biometric access systems, IP-based CCTV, and digital library automation.
- Conducted IT training sessions for more than 500 faculty members and students.

Assistant Professor & Director IT **2011–2013**
Kardan University, Kabul, Afghanistan

- Led a university-wide wireless network deployment supporting more than 3,000 users.
- Deployed and managed Linux-based servers and network monitoring solutions.
- Taught networking and IT infrastructure courses at undergraduate and graduate levels.
- Supervised student research projects in network administration and information technology.

Assistant Professor & IT Manager **2005–2010**
Agricultural University, Peshawar, Pakistan

- Designed and maintained LAN/WAN infrastructure using Cisco and 3Com technologies.
- Prepared technical proposals for major IT procurements and system upgrades.
- Delivered lectures on network design, administration, and IT management.
- Provided supervision and guidance for student research projects.

Lecturer & Network Administrator **2005–2010**
Agricultural University, Peshawar, Pakistan

- Delivered advanced courses in networking and telecommunications.
- Supervised laboratory sessions and student IT projects.
- Managed and maintained university network infrastructure.

Lecturer & Network Administrator **2000–2005**
Preston University, Peshawar, Pakistan

- Taught undergraduate courses in computer networking and related IT subjects.
- Managed and maintained WAN/LAN infrastructure.
- Supervised student projects and provided mentorship in networking and IT.

Core Competencies

1. **Network Engineering and IT Infrastructure:** Deployment and integration of optical-fibre networks, IPv6 with GEPON technology, Cisco VLANs, NOC establishment, Wi-Fi design, and network monitoring through PRTG, OpenNMS, and Webmin.
2. **IT Leadership and Project Management:** IT infrastructure planning, project budgeting, cross-functional coordination, procurement support, institutional systems implementation, and strategic network expansion.
3. **Academic and Research Services:** Research proposal development, postgraduate supervision, LaTeX document preparation for scholarly publishing, plagiarism detection and mitigation, and AI tools integration.
4. **Platforms and Environments:** Linux administration (Ubuntu and Fedora), Windows Server administration, Cisco systems, virtualisation technologies, and digital academic platforms.

Professional Certifications and Training

1. Microsoft Certified Systems Engineer (MCSE)
2. Cisco Certified Network Associate (CCNA)
3. Microsoft Certified Professional (MCP)
4. Specialised Training: Optical Fibre Splicing, Linux System Administration, AI Tools Integration, and Microcontroller Applications.

Technical Proficiency

1. **Tools and Platforms:** PRTG, OpenNMS, Webmin, LaTeX, ChatGPT, and Turnitin.
2. **Operating Systems:** Linux (Fedora and Ubuntu) and Windows Server.
3. **Networking:** GEPON, IPv6, VLANs, MPLS, Cisco systems, optical fibre, Wi-Fi design, LAN/WAN, and network monitoring.

Selected Technical and Academic Projects

1. **12 km Fibre-Optic Link Design:** Engineered and implemented a fibre-optic link from Khyber Exchange to Agricultural University, with attention to quality of service and latency.
2. **LaTeX Academic Conversion:** Converted a 150-page PhD thesis to LaTeX, incorporating equations, figures, and references.
3. **Institutional Grant Proposal:** Authored a successful USD 50,000 grant proposal for institutional IT infrastructure.

Professional Roles

1. Committee Member, National Curriculum Revision – Telecom Engineering, Higher Education Commission, Islamabad.
2. Director IT and Controller of Examinations (additional responsibilities), Bacha Khan University, Charsadda.

Languages

1. English: Fluent professional proficiency.
2. Urdu and Pashto: Native / bilingual proficiency.

Research Profile

Research contributions span artificial intelligence and machine learning, computer vision, IoT and sensor networks, cybersecurity, smart systems, physiological computing, software reliability, industrial anomaly detection, privacy-preserving learning, and applied data-driven decision support. The publication list contains **34 works**; the author's name is highlighted in every entry for rapid identification.

Publications

2026

1. Salam, Abdus; Alam, Fakhre; Shah, Dilawar; Rahman, Sami Ur; **Ali, Shujaat**; Tahir, Muhammad. "Improving cognitive stress classification via multimodal EEG and ECG fusion: gender differences in physiological response." *Scientific Reports, 16(1), 7304 (2026), Nature Publishing Group UK London.*
2. Awan, Sundas Shireen; Amjad, Suleman; **Ali, Shujaat**; Shah, Dilawar; Tahir, Muhammad. "Efficient sarcasm detection in social media using hybrid CapsNet-LSTM fusion and feature optimization." *Social Network Analysis and Mining, 16(1), 41 (2026), Springer Vienna.*
3. Kanwal, Tabassum; Yousaf, Rehan Mehmood; Altaf, Saud; **Ali, Shujaat**; Shah, Dilawar; Tahir, Muhammad. "Real-Time Recognition of Dynamic Gestures in Pakistan Sign Language Using YOLO and LSTM Networks." *Journal of Electrical and Computer Engineering, 2026(1), 2415428 (2026), Wiley.*
4. Salam, Abdus; Alam, Fakhre; Rahman, Sami Ur; Shah, Dilawar; **Ali, Shujaat**; Yousaf, Muhammad; Tahir, Muhammad. "Unveiling the Brain–Heart Connection: EEG and HRV Integration for Cognitive Stress Assessment." *International Journal of Human–Computer Interaction, 1–18 (2026), Taylor & Francis.*
5. Jilani, Malik Asif; Niaz, Iftikhar Azim; Zafar, Saad Naeem; Shah, Faiz Ali; **Ali, Shujaat**; Shah, Dilawar; Tahir, Muhammad. "Usability Quality Model: An Enhancement of Dromey's Model." *Engineering Reports, 8(4), e70747 (2026), John Wiley & Sons, Inc., Hoboken, USA.*
6. Ullah, Asad; Alam, Fakhre; Shah, Dilawar; **Ali, Shujaat**; Tahir, Muhammad. "Smarter Roads with Deep Learning: Faster Region-based CNN for Efficient Pothole Detection." *Arabian Journal for Science and Engineering, 1–12 (2026), Springer.*
7. Rahim, Adeel; Ullah Jan, Sharif; **Ali, Shujaat**; Shah, Dilawar; Tahir, Muhammad. "AI-driven financial fraud detection in Pakistan's banking sector: bridging strategic intent and operational implementation." *Humanities and Social Sciences Communications (2026), Palgrave.*
8. Jalil, Faiz; Mansoor, Rafiq; Ullah, Najeeb; Algamdi, Shabbab Ali; **Ali, Shujaat**; Shah, Dilawar; Tahir, Muhammad. "Performance expectancy and change agency: the imperative drivers of AI adoption in emerging economy technical organizations." *Future Business Journal, 12(1), 155 (2026), Springer.*
9. Khan, Farhan Mateen; Munir, Asim; **Ali, Shujaat**; Jameel, Tahir; Khan, Mohammed Asmat Ullah; Shah, Dilawar; Tahir, Muhammad. "Advancing Software Reliability: A Nonhomogeneous Poisson Process Model Integrating Dependent Failures, Testing Coverage, and Operational Uncertainties." *Journal of Software: Evolution and Process, 38(6), e70120 (2026), Wiley Online Library.*
10. Khalil, Adnan; Alam, Fakhre; Shah, Dilawar; Khalil, Irshad; Rahman, Sami Ur; **Ali, Shujaat**; Tahir, Muhammad. "Enhancing thermal image-based intrusion detection with spatial-channel attention and multi-scale fusion." *Neural Computing and Applications, 38(12), 495 (2026), Springer.*
11. Raza, Ali; Bangyal, Waqas Haider; Ashraf, Adnan; Ul-Qayyum, Zia; **Ali, Shujaat**; Shah, Dilawar; Haleem, Muhammad. "Gaussian Mutation-based Whale Optimization Algorithm for Benchmark Function Optimization and Neural Network Classification." *International Journal of Computational Intelligence Systems (2026), Springer.*
12. Atif, Muhammad; Khan, Izaz Ahmad; Abrar, Mohammad; **Ali, Shujaat**; Shah, Dilawar; Tahir, Muhammad. "A Lightweight Federated MLP Framework for Privacy-Preserving Brain MRI Classification." *Applied Computational Intelligence and Soft Computing, 2026, 2118911 (2026), Wiley.*
13. Khalil, Adnan; Alam, Fakhre; Shah, Dilawar; Zaman, Mudassir; Khalil, Irshad; **Ali, Shujaat**; Ur Rahman, Sami; Khalil, Hammad; Tahir, Muhammad. "Lightweight weapon detection via fractional-order Legendre polynomials for smart edge devices." *The Visual Computer, 42(10), 467 (2026), Springer.*
14. Verma, Pankaj; Gandhi, Krishna; Cheema, Adnan Mustafa; Ashfaq, Muhammad; Shah, Dilawar; **Ali, Shujaat**; Tahir, Muhammad. "DeepPipeNet enables deep learning based anomaly detection for oil and gas pipeline monitoring." *Discover Applied Sciences, 8, 498 (2026), Springer Nature.*

2025

15. Qazi, Shahid; Shah, Dilawar; Khan, Mohammad Asmat Ullah; **Ali, Shujaat**; Abrar, Mohammad; Khan, Asfandyar; Tahir, Muhammad. "m5C-TNKmer: identification of 5-Methylated base cytosine of ribonucleic acid using supervised machine learning techniques." *Engineering Reports, 7(1), e13073 (2025), John Wiley & Sons, Inc., Hoboken, USA.*
16. Ali, Muhammad Salman; Akram, Arslan; Rashid, Javed; Jaffar, Muhammad Arfan; Shah, Dilawar; **Ali, Shujaat**; Tahir, Muhammad. "Fake fingerprint classification using hybrid features learning with gradient boosting." *Applied Computational Intelligence and Soft Computing, 2025(1), 8442143 (2025), Wiley.*

17. Khan, Asfandyar; Ullah, Faizan; Shah, Dilawar; Khan, Muhammad Haris; **Ali, Shujaat**; Tahir, Muhammad. "Eco-TaskSched: a hybrid machine learning approach for energy-efficient task scheduling in IoT-based fog-cloud environments." *Scientific Reports, 15(1), 12296 (2025), Nature Publishing Group UK London.*
18. Ashfaq, Muhamad; Khan, Imran; Afzal, Rana Fezan; Shah, Dilawar; **Ali, Shujaat**; Tahir, Muhammad. "Enhanced wheat yield prediction through integrated climate and satellite data using advanced AI techniques." *Scientific Reports, 15(1), 18093 (2025), Nature Publishing Group UK London.*
19. Alam, Fakhre; Ullah, Asad; Shah, Dilawar; **Ali, Shujaat**; Tahir, Muhammad. "Artificial intelligence in melanoma detection: a review of current technologies and future directions." *International Journal of Intelligent Systems, 2025(1), 3164952 (2025), Wiley.*
20. Nawaz, Mamoona; Tahira, Shireen; Shah, Dilawar; **Ali, Shujaat**; Tahir, Muhammad. "Lightweight machine learning framework for efficient DDoS attack detection in IoT networks." *Scientific Reports, 15(1), 24961 (2025), Nature Publishing Group UK London.*
21. Sabir, Sabahat; Maqbool, Fahad; Saad Razzaq, Muhammad; Shah, Dilawar; **Ali, Shujaat**; Tahir, Muhammad; Muhammad Faisal Shehzad, Hafiz. "Semantic web-based ontology: a comprehensive framework for cardiovascular knowledge representation." *BMC Cardiovascular Disorders, 25(1), 519 (2025), Springer.*
22. Waqas, Muhammad; Ullah, Basir; Khan, Afed Ullah; Rauf, Ateeq Ur; Khan, Ilman; Ahmad, Muhammad Bilal; Khan, Ezaz Ali; **Ali, Shujaat**; Shah, Dilawar; Tahir, Muhammad. "Precision Flood Forecasting in Dynamic Hydrological Systems: Integrating LP-III Distributions, Multilayer Neural Networks, and CMIP6 Projections for the Swat Basin." *Journal of Flood Risk Management, 18(3), e70103 (2025), Wiley Online Library.*
23. Ashfaq, Muhammad; Khan, Imran; Shah, Dilawar; **Ali, Shujaat**; Tahir, Muhammad. "Predicting wheat yield using deep learning and multi-source environmental data." *Scientific Reports, 15(1), 26446 (2025), Nature Publishing Group UK London.*
24. Khalil, Adnan; Alam, Fakhre; Shah, Dilawar; Khalil, Irshad; **Ali, Shujaat**; Tahir, Muhammad. "Real time blood detection in CCTV surveillance using attention enhanced InceptionV3." *Scientific Reports, 15(1), 28977 (2025), Nature Publishing Group UK London.*
25. Anjum, Fatima; Maqbool, Fahad; Razzaq, Muhammad Saad; Shehzad, Hafiz Muhammad Faisal; **Ali, Shujaat**; Shah, Dilawar; Tahir, Muhammad; Ilyas, Muhammad. "Semantic web ontology for structured knowledge representation and clinical decision support in eye diseases." *Scientific Reports, 15(1), 29986 (2025), Nature Publishing Group UK London.*
26. Ali, Syed Ashraf; Imran Saeed, Sohail; Ahmad, Sanaullah; Waqas, Muhammad; Haider Ali, Syed; Shah, Dilawar; **Ali, Shujaat**; Tahir, Muhammad. "Optimizing Smart Grid Demand Response: A Stackelberg Game Framework for Priority-Aware Dynamic Pricing and Load Scheduling." *Engineering Reports, 7(8), e70341 (2025), Wiley Online Library.*
27. Javaid, Muhammad Aqib; Shahzad, Muhammad Suleman; Shehzad, Hafiz Muhammad Faisal; Razzaq, Samreen; **Ali, Shujaat**; Shah, Dilawar; Tahir, Muhammad. "DSSCC net enhanced skin cancer classification using SMOTE Tomek and optimized convolutional neural network." *Scientific Reports, 15(1), 41554 (2025), Nature Publishing Group UK London.*
28. Ali, Syed Ashraf; Saeed, Sohail Imran; Khan, Jehanzeb; **Ali, Shujaat**; Shah, Dilawar; Tahir, Muhammad. "A hybrid Stackelberg–Markov framework for adaptive load scheduling and dynamic pricing in smart grids." *Energy Informatics, 9(1), 6 (2025), Springer International Publishing, Cham.*

2024

29. **Ali, Shujaat**; Nadeem, Muhammad; Ahmed, Sheeraz; Tahir, Muhamad. "IoT-based framework for optimizing energy efficiency and reliability in acoustic sensor networks using mobile sinks." *Scientific Reports, 14(1), 24122 (2024), Nature Publishing Group UK London.*
30. **Ali, Shujaat**; Nadeem, Muhammad; Ahmed, Sheeraz; Ullah, Mohammad Asmat; Tahir, Muhammad. "3D dynamic topology with energy-aware forwarding in underwater acoustic networks (MAEARS)." *IEEE Access, 12, 129319–129329 (2024), IEEE.*
31. **Ali, Shujaat**; Nadeem, Muhammad; Ahmed, Sheeraz; Khan, Faheem; Khan, Murad; Alharbi, Abdullah. "Acoustic Sensors data transmission integrity and endurance with IoT-enabled location-aware framework." *PeerJ Computer Science, 10, e2452 (2024), PeerJ Inc.*

2018

32. Ullah, Faizan; Shah, Sabir; Shah, Dilawar; Salam, Abdul; **Ali, Shujaat**. "Protocol for Systematic Literature Review of Face Recognition in Uncontrolled Environment." *EAI Endorsed Transactions on Scalable Information Systems, 5(16), e11 (2018).*
33. Khan, Faheem; Gul, Toor; **Ali, Shujaat**; Rashid, Abdur; Shah, Dilawar; Khan, Samiullah. "Energy aware cluster-head selection for improving network life time in wireless sensor network." *Science and Information Conference, 581–593 (2018), Springer.*

2017

34. Ullah, Faizan; Shah, Dilawar; Shah, Sabir; Salam, Abdus; **Ali, Shujaat**. "A novel approach for human face detection in color images using skin color and golden ratio." *J. Appl. Environ. Biol. Sci., 7(10), 159–164 (2017).*