

Dr. Hussain Shah

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Academic & Research Profile

Computer Science researcher with a PhD and expertise in Artificial Intelligence, Deep Learning, IoT, and Cybersecurity. Research interests include Generative AI, intelligent threat detection, IoT security, and computer vision. Experienced in research, project supervision, and publishing in AI and intelligent systems.

Research Interest

- Artificial Intelligence & Deep Learning
- Wireless Sensor Networks
- Mobile Ad Hoc Networks
- IoT Security & Deep Learning-based Intrusion Detection
- Cloud Computing Security

Education

2019–2026

PhD in Computer Science

Islamia College, Peshawar.

Title : “Securing the Internet of Things: A Deep Learning Based Intrusion Detection Approach”

2015–2017

MS in Computer Science

Institute of Computer Science and Information Technology, The University of Agriculture, Peshawar.

Gold Medalist

2014-2015

Bachelor of Education

Abdul Wali Khan University, Mardan

2011–2013

Master of Computer Science (MCS)

Abdul Wali Khan University, Mardan.

Work Experience

2018-to date: Lecturer at Shaikh Zayed Islamic Centre, University of Peshawar.

- Teach undergraduate courses in computer science, networking, algorithms, software engineering, and information technology.
- Supervise undergraduate research and software development projects involving artificial intelligence, deep learning, computer vision, and related technologies.
- Contribute to academic coordination, curriculum-related activities, and student mentoring.

2019-to date: Assistant Warden at Shaikh Zayed Islamic Centre Hostel, University of Peshawar

2020-to date: BS (CS) Coordinator, Shaikh Zayed Islamic Centre, University of Peshawar.

- Coordinate academic and administrative activities for the BS Computer Science program.
- Support faculty and students in academic planning and program-related activities

Teaching

Mobile and wireless communication

Theory of Automata

Data structure and Algorithms

Computer networks

Digital Logic Design

Information Technology

Software Engineering

Network Security

Publications

- Malik, S., Soomro, A. M., Dahri, K., & **Shah, H.** (2026). Retrieval Augmented Generation (RAG): Enhancing the Accuracy, Reliability, and Trustworthiness of Large Language Models for Intelligent Decision Support. *International Journal of Advanced Research*, 3(2), 402–414.

- Ahmed, F., **Shah, H.**, Azim, N., & Rahman, F. (2026). Securing Agentic Artificial Intelligence Systems: Assessing Prompt Injection, Memory Poisoning, and Autonomous Tool-Use Risks in Intelligent Applications. *International Journal of Advanced Research*, 3(3), 42–6.
- Malik, S., Shafique, A., **Shah, H.**, & Ali, W. (2026). Generative AI for Intelligent Threat Detection: A Hybrid Deep Learning Framework for Secure Digital Systems. *Spectrum of Engineering Sciences*.
- Amin, B., Nasir, J., Khan, I., & **Shah, H.** (2026). Computer Vision and Deep Learning for Climate-Resilient Agriculture: Improving Soil Health, Crop Protection, and Community Livelihoods. *Journal of Climate and Community Development*, 5(2), July–December 2026.
- **Shah, H.**, Farman, H., Jan, B., Khalil, A., & Nasralla, M. M. (2025). Securing the Internet of Things: Deep Learning Driven Intrusion Detection With Missing Data Imputation. *IEEE Access*, 13, 146476–146491. DOI: 10.1109/ACCESS.2025.3599931.
- Rahman, Z., Hussain, A., **Shah, H.**, & Arshad, M. (2021). Urdu News Clustering Using K-Mean Algorithm on the Basis of Jaccard Coefficient and Dice Coefficient Similarity. *ADCAIJ: Advances in Distributed Computing and Artificial Intelligence Journal*, 10(4), 381–399. DOI: 10.14201/ADCAIJ2021104381399.
- Khan, S., Faisal, F., **Shah, H.**, & Waheed, K. (2021). Priority-Based Ranking Using Optimization Model for Cricket Team Performance. *International Review of Basic and Applied Sciences*, 9(3).
- **Shah, H.**, Din, A. U., Abizar, A., Khan, A., & Din, S. U. (2020). Enhancing the Quality of Service of Cloud Computing in Big Data Using Virtual Private Network and Firewall in Dense Mode. *International Journal of Advanced Computer Science and Applications*, 11(3).
- Arshad, M., Rukh, L., **Shah, H.**, Khan, B., Jan, N., & Ali, S. (2019). Performance Analysis of MPLS and Traditional IP in Node Scalable Networks. *Journal of Independent Studies and Research*.

Awards

- **Gold Medalist** – MS Computer Science Degree - (2017)
- Received Prime Minister’s Fee Reimbursement Scheme for the MS Degree - (2016)
- **Secured 1st Position** in High Jump, Intervarsity Sports Tournament, (2012)
- **Secured 1st Position** in Long Jump , Intervarsity Sports Tournament (2012)
- **Secured 2nd Position** in Cross-Country Race, Inter-Collegiate Sports Tournament, (2011)
- **Secured 2nd Position**, 800-Meter Race, Inter-Collegiate Sports Tournament, (2010)

Research Projects Supervised

- Supervised a **Directorate General of Science & IT (DGSIT)**-sponsored project to develop **AI-powered smart glasses featuring an assistive vision system for the visually impaired**.
- Supervised the **evaluation of deep learning models and mobile app development for real-time leaf disease detection**.
- **G-MAUT : A Hybrid Framework for Optimal Cluster Head Selection**.

- Supervised the **development of a deep learning framework for multiclass heart sound analysis to advance automated cardiac diagnostics.**

Certifications

- Certificate of Excellence in CCTV – Net Home.
- Certificate of Excellence MCSE (2016) – Net Home.
- Certificate of Excellence CCNA (R&S) – Net Home.
- Certificate in Computer Applications – The IBM College of Computer, Shergarh.

Technical & Research Skills

- **AI & Machine Learning:** Machine Learning, Deep Learning, Generative AI, Large Language Models.
- **Networks & Security:** IoT, WSNs, MANETs, Network Security, Intrusion Detection.
- **Cloud & Distributed Systems:** Cloud Computing, Big Data.
- **Research Areas:** IoT, Computer Vision, NLP, Optimization, Intelligent Systems.

References

- **Prof. Dr. Muazzam Ali Khattak**, Tenured Professor, (Muazzam.khattak@qau.edu.pk), Department of Computer Science, Quaid-i-Azam University Islamabad, Pakistan.
- **Dr. Haleem Farman**, Assistant Professor, (Haleem.farman@icp.edu.pk), Department of Computer Science, Islamia College, Peshawar, Pakistan.