MUHAMMAD USMAN

Lecturer in Information Technology | Research Associate

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Research Profiles: Google Scholar | ORCID

ACADEMIC PROFILE

University lecturer and researcher with academic experience at Bahauddin Zakariya University, the University of Gujrat, and Shanghai Jiao Tong University. Currently serving as a Research Associate at Beihang University while pursuing a PhD in Computer Science and Technology.

RESEARCH INTERESTS

Blockchain-enabled security and authentication; cloud computing and cloud-IoT security; wireless sensor networks; quality-of-service optimization; cloud data centers; 5G and device-to-device (D2D) networks; machine learning and deep learning applications.

CURRENT ACADEMIC APPOINTMENTS

Research Associate *Current*

School of Computer Science & Engineering, Beihang University (BUAA) | Beijing, China

Lecturer in Information Technology (BPS-18) *March 2018–Present*

Bahauddin Zakariya University (BZU) | Multan, Pakistan

Currently on study leave while pursuing the PhD at Beihang University.

TEACHING EXPERIENCE

Teaching Assistant *2023–Present*

School of Computer Science & Engineering, Beihang University (BUAA) | Beijing, China

Lecturer in Information Technology (BPS-18) *March 2018–Present*

Bahauddin Zakariya University (BZU) | Multan, Pakistan |

Courses taught: Operating Systems; Computer Networks; System and Network Administration; Mobile and Wireless Communication; Cyber Security.

EDUCATION

PhD in Computer Science and Technology *September 2021–Present*

Beihang University (BUAA) | Beijing, China

MS in Information and Communication Engineering *September 2012–March 2015*

Shanghai Jiao Tong University | Shanghai, China

BS (Hons) in Information Technology *September 2006–December 2010*

Bahauddin Zakariya University | Pakistan

PUBLICATIONS

- M. Usman, J. Pu, A. U. Rehman, S. Zainab, and M. K. Afzal (2026). Blockchain-Enhanced Secure Data-Driven QoS Framework for Wireless Sensor Networks. International Journal of Network Management, 36(4), e70051. doi.org/10.1002/nem.70051
- Rehman, A. U., Lu, S., Heyat, M. B. B., Akhtar, F., Hayat, M. A. B., Usman, M., & Muaad, A. Y. (2026). BSDS-ShareCrypt: A blockchain-enabled framework for secure, anonymous, and accountable data sharing in cloud-IoT environments using aggregate key searchable encryption. International Journal of Information Security, 25(1), 10.
- M. Usman, J. Pu, A. U. Rehman, M. K. Afzal, M. Arshad, and Y. Muhammad (2025). SEEVMC: A secure, energy efficient virtual machine consolation approach for QoS in cloud data centers. ETRI Journal, 1–19. doi.org/10.4218/etrij.2024-0386
- Batool, S., Zainab, S., Usman, M., & Pu, J. (2025). Optimized hybrid CNN framework for enhanced tumor classification in breast cancer diagnosis. International Journal of Imaging Systems and Technology, 35(6), e70252.
- Rehman, A. U., Lu, S., Usman, M., Moqurrab, S. A., Srivastava, G., Yoo, J., & Al-Aqrabi, H. (2025). IBS-ECDHE: A blockchain-enhanced lightweight protocol for secure cloud-IoT in biomedical HCPS, pp. 564–591.

PUBLICATIONS (CONTINUED)

- Rehman, A. U., Lu, S., Usman, M., Heyat, M. B. B., et al. (2025). Efficient blockchain-based mutual remote authentication for enhancing privacy and security in cloud internet of things environment. Peer-to-Peer Networking and Applications, 18, 275. doi.org/10.1007/s12083-025-02083-9
- Usman, M., Pu, J., Rehman, A. U., & Lu, S. (2025). 5G and D2D Network for Smart Cities Using Internet of Thing Services. In L. Yan, H. Duan, & Y. Deng (Eds.), Advances in Guidance, Navigation and Control (ICGNC 2024), Lecture Notes in Electrical Engineering, Vol. 1354. Springer, Singapore. doi.org/10.1007/978-981-96-2268-9_27
- Arshad, M., Liu, J., Usman, M., & Khalid, W. (2024). A Secure and Distributed Decision Based Handover Scheme for Low Earth Orbit Satellites in 6G Internet. 2024 21st International Bhurban Conference on Applied Sciences and Technology (IBCAST), Murree, Pakistan, pp. 281–287. doi.org/10.1109/IBCAST61650.2024.10876920

PEER REVIEW AND ACADEMIC SERVICE

Journal peer-review activity:

- Wireless Networks.
- IEEE Transactions on Consumer Electronics
- Journal of Network and Systems Management
- International Journal of Machine Learning and Cybernetics
- Soft Computing
- The Journal of Supercomputing
- Cognitive Computation
- Cluster Computing
- Scientific Reports

PROFESSIONAL MEMBERSHIPS

IEEE Communications Society — Student Member *January 2025–December 2026*

China Computer Federation (CCF) — Student membership recorded in ORCID *30 June 2026*

PROFESSIONAL EXPERIENCE

Data Processing Officer (BPS-17) *August 2017–March 2018*

Drug Testing Department, Primary & Secondary Healthcare, Government of Punjab | Pakistan

Lecturer in Computer Science *November 2016–March 2017*

Department of Computer Science, University of Gujrat | Pakistan

Research Assistant *September 2012–March 2015*

SEIEE, Department of Computer Science, Shanghai Jiao Tong University | Shanghai, China

HONORS, SCHOLARSHIPS & AWARDS

- Excellent Study Distinguish Student Award, Beihang University, Beijing, China (2025).
- PhD Scholarship Award, Beihang University, Beijing, China (2021).
- Taiwan International Graduate Program (TIGP), SNHCC Award (2021).
- Research and Travel Grant Award, Chalmers University of Technology, Sweden (2016).
- Scholarship Award, Universidade Estadual de Campinas, Brazil (2016).
- MS Scholarship / Excellent International Student Award, Shanghai Jiao Tong University, China (2012).

TECHNICAL SKILLS

Programming & Data Analysis: Python, NumPy, pandas, scikit-learn

Machine Learning & Visualization: Machine learning, deep learning, Seaborn, Tableau, TensorFlow

Networks, Cloud & Systems: IoT, Google Cloud, LAN design, troubleshooting, Windows Server 2016, Active Directory, DNS, firewalls, ISA Server, Exchange Server, GSM, CCNA