

Dr. Uzma Omer

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Career Objective:

To work in an environment that would allow me to apply my professional and analytical skills for value addition and growth of the organization.

Professional Experience:

Assistant Professor

Dec 2022 to Date

University of Education, Lahore, Pakistan.

Web: www.ue.edu.pk

Job Responsibilities:

- Preparing and delivering lectures as well as developing assessment materials.
- Preparing scheme of studies and ensuring the implementation.
- Providing feedback on students' work, mentoring and guiding them.
- Conducting mentoring and lab sessions for students.
- Supervision of final year projects/ theses.
- Performing duties as member of various committees such as research proposal review committee.
- Handling departmental level queries related to University Management System (UMS) as departmental focal person.

Lecturer

Nov 2016 to Dec 2022

University of Education, Lahore, Pakistan.

Web: www.ue.edu.pk

Job Responsibilities:

- Preparing and delivering lectures.
- Developing assessment materials.
- Providing feedback on students' work, mentoring and guiding them.
- Analysis of students' performance and evaluation from various aspects.
- Conducting mentoring and lab sessions for students.
- Supervision of final year projects.
- Handling departmental level queries of UMS.

Assistant Professor

Dec 2009 to Sep 2014

Virtual University of Pakistan, Lahore, Pakistan.

Web: www.vu.edu.pk

Job Responsibilities:

- Preparing and delivering teaching materials.
- Conducting mentoring and lab sessions for students.

- Developing and implementing pedagogies for courses.
- Developing and enhancing study programs.
- Developing and analyzing of assessment materials.
- Analysis of students' performance and evaluation from various aspects.
- Devising the learning objectives for each stage, topics and sub-topics to be covered.
- Identification of learning resources, tasks to set, and end-of-course evaluation.
- Development of semester plans and ensure execution.
- Providing support to the teams of Instructors.
- Designing learning management system's modules for learning activities.
- Formulation and implementation of training plans and procedures.
- Preparation of templates, guiding materials and standard operating procedures for various academic activities.
- Formulation of quality assurance and review plans, procedures and parameters for courses and ensure implementation.

Instructor

Oct 2003 to Dec 2009

Virtual University of Pakistan, Lahore, Pakistan.

Web: www.vu.edu.pk

Job Responsibilities:

- Developing and delivering course contents.
- Creating tutorials as support materials.
- Developing programming challenge codes.
- Guiding and mentoring students.
- Setting and implementing learning and evaluation mechanism and schedules for the entire course-work.
- Grading and assessing students' coursework.
- Giving feedback on learners' work.
- Replying to students' queries through discussion boards, live tutorials, and emails.
- Monitoring the discussion groups and tracking online course activities of students.

Internee [Software Quality Assurance]/Technical writer

Aug 2003 to Oct 2003

Ameer Soft Private Limited

RB-4, 1st Floor, Awami Complex, Usman Block, New Garden Town, Lahore, Pakistan.

Job Responsibilities:

- Passing software from various test cycles.
- Identification of errors and bugs in software.
- Preparation of test reports.

Professional Education:

Qualification	Institution	CGPA/ Division
PhD Doctor of Philosophy in Computer Science, 2016-2022.	University of Management and Technology [UMT], Lahore, Pakistan.	3.95
MSCS Masters of Science in Computer Science, 2009-2012.	National University of Computer and Emerging Sciences [NUCES- FAST], Lahore, Pakistan.	3.07

MCS Masters in Computer Sciences, 2000–2003.	University Of Central Punjab [UCP], Lahore, Pakistan.	3.30
B.Sc. Bachelors of Sciences [Mathematics, Statistics, Economics], 1998–2000.	Kinnaird College for Women, Lahore, Pakistan.	First
Intermediate [Mathematics, Statistics, Economics] 1996–1998.	Lahore College for Women University, Lahore, Pakistan.	First
Matric [Science], 1994–1996.	Cathedral High School, Lahore, Pakistan.	First

Research Interests:

Learning analytics, Artificial intelligence, IoT, Educational technology, Computing education, and Big data analytics.

Research Publications:

1. Shahzada Muhammad Junaid, Tehseen, R., Omer, U., Muhammad Inam Ul Haq, & Zaheer, A. (2025). Olive Leaf Disease Detection Using Transformer-Based Deep Learning Approach. *International Journal of Innovations in Science & Technology*, 7(4), 3048–3062.
2. Fatima, A., Tehseen, R., Nasr, K., Uzma Omer, Muhammad Inam Ul Haq, & Javaid, R. (2025). A Framework for the Prediction of Parkinson's Disease Using Agentic Artificial Intelligence. *International Journal of Innovations in Science & Technology*, 7(4), 3033–3047.
3. Amjad, M., Tehseen, R., Nasr, K., Aslam, F., Mehr Awan, M., & Omer, U. (2025). Agentic AI for Autonomous Soil and Fertilization Management for Agriculture Sustainability. *International Journal of Innovations in Science & Technology*, 7(4), 2997–3017.
4. Shan, A., Omer, U., & Tehseen, R. (2025). IoT-based automated artificial rainfall system for smog control: a systematic literature review. *International Journal of Environmental Science and Technology*, 22(16), 17269-17298.
5. Saleem, M. B., Qamar, N., Danial, R., Sardar, K., Noor, M., & Omer, U. (2025). Analyzing the Impact of Machine Learning Algorithms on Software Requirements Classification. *VFAST Transactions on Software Engineering*, 13(1), 88-98.
6. Tehseen, R., Saqib, S., Omer, U., Mustaqeem, A., Mehr, M., & Siddiqui, S. Y. (2025). Systematic Literature Review on Application of Naive Bayes Algorithm for Large Audio Data Classification. *Journal of Computing & Biomedical Informatics*, 9(01).
7. Ishaq, T., Tehseen, R., Omer, U., Mustaqeem, A., Javaid, R., Mehr, M., & Yousaf, M. (2025). Incremental Learning with Self-Organizing Bayesian Adaptive Incremental Network (SOBAIN). *Journal of Computing & Biomedical Informatics*, 8(02).
8. Tehseen, R., Omer, U., Javaid, R., Mehr, M., Yousaf, M., & Zaheer, A. (2024). Prediction of Brain Stroke Using Federated Learning. *International Journal of Innovations in Science & Technology* 6 (4), 1995-2013
9. Tehseen, R., Haider, W., Omer, U., Qamar, N., Sabahat, N., & Javaid, R. (2024). Predicting depression among type-2 diabetic patients using federated learning.
10. Fatima, N., Ashraf, M., Tehseen, R., Omer, U., Sabahat, N., Javaid, R., ... & Zaheer, A. (2024). AI-Powered Phishing Detection and Mitigation for IoT-Based Smart Home Security. *Journal of Computing & Biomedical Informatics*, 8(01).
11. Tehseen, R., Omer, U., Mehr, M., Javaid, R., & Saqib, S. (2023). Impact of climatic anomalies and reservoir induced seismicity on earthquake generation using Federated Learning.
12. Omer, U., Tehseen, R., Farooq, M. S., & Abid, A. (2023). Learning analytics in programming courses: Review and implications. *Education and Information Technologies*, 28(9), 11221-11268.
13. Farooq, M. S., Omer, U., Ramzan, A., Rasheed, M. A., & Atal, Z. (2023). Behavior driven development: A systematic literature review. *IEEE Access*, 11, 88008-88024.
14. Farooq, M. S., Masooma, A., Omer, U., Tehseen, R., Gilani, S. A. M., & Atal, Z. (2023). The role of IoT in woman's safety: a systematic literature review. *IEEE Access*, 11, 69807-69825.

15. Farooq, M. S., Tehseen, R., Qureshi, J. N., Omer, U., Yaqoob, R., Tanweer, H. A., & Atal, Z. (2023). FFM: Flood forecasting model using federated learning. *IEEE Access*, *11*, 24472-24483.
16. Farooq, M. S., Zahid, Z., Omer, U., Tehseen, R., Alvi, A., Farooq, U., & Atal, Z. (2022). Applications of augmented reality in neurology: architectural model and guidelines. *IEEE Access*, *10*, 102804-102830.
17. Farooq, M. S., Tehseen, R., Omer, U., Riaz, S., & Tahir, S. (2022). Software Testing Education: A Systematic Literature Review. *VFAST Transactions on Software Engineering*, *9*(4), 109-125.
18. Tahseen, R., Omer, U., Farooq, M. S., & Adnan, F. (2022). Text Summarization Techniques Using Natural Language Processing: A Systematic Literature Review. *VFAST Transactions on Software Engineering*, *9*(4), 102-108.
19. Farooq, M. S., Munir, K., Alvi, A., Omer, U. (2022). Design of a Substitution Box using a Novel Chaotic Map and Permutation. *VFAST Transactions on Software Engineering*, *10* (2), 01-08.
20. Farooq, M. S., Akram, Z., Alvi, A., Omer, U. (2022). Role of Logistic Regression in Malware Detection: A Systematic Literature Review. *VFAST Transactions on Software Engineering*, *10* (2), 36-46.
21. Farooq, M. S., Hamid, A., Alvi, A., & Omer, U. (2022). Blended Learning Models, Curricula, and Gamification in Project Management Education. *IEEE Access*, vol. 10, pp. 60341-60361, 2022.
22. Farooq, M. S., Tehseen, R., & Omer, U. (2021). A Retrospective Study for the Selection of Suitable Programming Language for the High Schools in Pakistan. *VFAST Transactions on Software Engineering*, *9*(3), 01-11.
23. Omer, U., Farooq, M. S., & Abid, A. (2021). Introductory programming course: review and future implications. *PeerJ Computer Science*, *7*, e647.
24. Farooq, M. S., Tehseen, R., & Omer, U. (2021). Blockchain based Online Examination Assessment models for Educational Institutes: A Systematic Literature Review. *VFAST Transactions on Software Engineering*, *9*(3), 57-67.
25. Farooq, M. S., Tahseen, R., & Omer, U. (2021). Ethical Guidelines for Artificial Intelligence: A Systematic Literature Review. *VFAST Transactions on Software Engineering*, *9*(3), 33-47.
26. Farooq, M. S., Omer, U., & Tahseen, R. (2021). Software Project Management Education: A Systematic Review. *VFAST Transactions on Software Engineering*, *9*(3), 102-119.
27. Omer, U., Farooq, M. S., & Abid, A. (2020). Cognitive learning analytics using assessment data and concept map: a framework-based approach for sustainability of programming courses. *Sustainability*, *12*(17), 6990.

Conferences, Workshops, and Seminars:

- Attended ICAIET (International Conference on AI and Emerging Technologies) 2025, held at University of Management and Technology on 19th June, 2025.
- Member and convener of organizing committees of RACSIT (Recent Advances in Computer Science and Information Technology) 2024, held at University of Education on 7-8th February, 2024.
- Arranged Virtual Reality (VR) labs workshop in collaboration with the foreign experts in the field of applications of VR on Jan 17th, 2018.
- Arranged workshop for the advanced Excel skills and uses in performing professional activities on Aug 17th, 2018.
- Attended 3- day orientation on Computer Science curricula arranged by HEC conducted on Jan 31st to Feb 2nd, 2018.
- Participated in seminar highlighting the aspects of quality in Higher Education held on Dec 21st, 2016.
- Attended SAARC conference on Promoting Open and Distance learning as means for Non-Formal Education in Colombo, Sri Lanka, held on July 26th to July 28th, 2010.

Research Projects:

1. **Cognitive learning analytics and reporting system (Launched)**

The application examines learners' cognition at various levels by applying cognitive learning analytics metrics. The system exhibits analysis of the learners' cognitive performance and presents reporting through visualization by using the technique of concept mapping.

2. **Social learning platform to support peer-to-peer learning (On going)**

A social learning platform to support peer-to-peer interactions for learners and workers. The system is designed on the concepts of social learning theory where learners and workers find convenient to discuss their problems and solve those with the help of their peers. The application is typically intended to serve as an environment that offers peer-support to the computer science students and personnel working in the software industry.

Computing Skills:

Languages:

C/C++/C#, JAVA, Python, Assembly, Prolog, and UML (for designing)

Tools:

Borland C, Dev – C++, Anaconda, Visual C++, Visual C#, Codeboard, and CMap Tools.

Databases:

MS Access, Oracle, and My SQL

Operating Systems:

DOS, Windows, and Linux [Ubuntu]

Packages:

MS Office, Microsoft Project, and ER-WIN

Additional Professional Responsibilities:

Research Review:

- Contributing to the global academic community as an invited reviewer for prestigious international journals
- Critically evaluating manuscripts for methodology, innovation, and alignment with high-impact publication standards

Administrative/Management Tasks:

- Mentoring and providing feedback as departmental head
- Appraising performances of faculty members
- Making and implementing work schedules for faculty
- Reviewing assessment and evaluation materials
- Reviewing learning contents
- Ensuring quality of work

Contest Management:

- Organizing various programming contests
- Devising problem statements for programming competitions
- Reviewing and evaluating participants' submissions

References:

- 1) **Dr. Muhammad Shoaib Farooq**
Professor
School of Systems and Technology,
Department of Artificial Intelligence,
University of Management and Technology, Lahore, Pakistan.
Email address: shoaib.farooq@umt.edu.pk
Contact number: 0300-9491764

- 2) **Dr. Adnan Abid**
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Punjab University College of Information Technology,
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