

Prof. Dr. Shehnila Zardari

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General Profile

Distinguished Academic Leader and PhD-qualified Researcher with 20 years of experience in Software Engineering, Cloud Computing, and AI. Currently serving as Chairperson of Software Engineering at NED University, with a proven track record of securing high-value research funding (SHEC, IGNITE, MoST) and publishing in high-impact journals. Recognized with the 2023 Best Researcher Award and 2024 Best Teacher Award, I seek to leverage my expertise in strategic curriculum development, multi-million PKR grant management, and international research collaboration to drive institutional excellence.

Education

2016 PhD, Computer Science, The University of Birmingham, The United Kingdom.

Supervisor Dr. Rami Bahsoon

Thesis *Cloud Adoption: A Goal-Oriented Requirements Engineering Approach*

2006–2008 M.E, Communication Systems and Networks, Mehran University of Engineering and Technology, Pakistan.

2002–2006 B.E, Software Engineering, Mehran University of Engineering and Technology, Pakistan.

Publications

Articles in Peer-reviewed International Journals

- 1 Hussain, Saddam, **Shehnila Zardari**, and Mehar Ullah. "Systematic Analysis of Blockchain Based Trust Management Frameworks in Crowdfunding." *IEEE Access* (2025). (JCR Impact Factor 3.6) (W Category)
- 2 Alam, Sana, **Shehnila Zardari**, Maria Munawwar, Tazaim Aamir, Manoj Gupta, and Aziz Nanthaamornphong. "WhiteShield: A white-wash resilient blockchain-based trust management system." *SoftwareX* 32 (2025): 102385. (JCR Impact Factor 2.4) (W Category)
- 3 Fatima, Zainab, **Shehnila Zardari**, and Muhammad Hassan Tanveer. "Bridging domain gaps in agricultural 3D point cloud classification using adversarial domain adaptation." *Scientific Reports* 15, no. 1 (2025): 41995. (JCR Impact Factor 3.9) (W Category)
- 4 Soomro, Toufique Ahmed, Faisal Bin Ubaid, **Shehnila Zardari**, Ahmed Ali, Marwah M. Alansari, and Shima A. Nagro. "The State of Retinal Image Analysis: Deep Learning Advances and Applications." *IEEE Access* (2025). (JCR Impact Factor 3.6) (W Category)
- 5 Khan, Tanazzah Rehman, Sheraz Saudagar, Zainab Fatima, M. Hassan Tanveer, **Shehnila Zardari**, Razvan C. Voicu, and Hazry Desa "Augmented Reality in Robotic Surgery: A Case Study on Precision and Workflow Integration from Real to Virtual Environment." *Journal of Robotics and Control (JRC)* 6.3 (2025): 1357-1374. (Scopus Indexed)
- 6 Fatima, Zainab, **Shehnila Zardari**, and Muhammad Hassan Tanveer. "Advancing industrial object detection through domain adaptation: A solution for industry 5.0." *In Actuators*, vol. 13, no. 12, p. 513. MDPI, 2024 (JCR Impact Factor 2.2) (W Category)
- 7 Muhammad Ali Hassan, **Shehnila Zardari**, Muhammad Umer Farooq, Marwah M Alansari, Shima A Nagro, Systematic Analysis of Risks in Industry 5.0 Architecture, *Applied Sciences* 14, No. 4:1466 (JCR Impact Factor 2.7) (W Category)
- 8 Muhammad Hassan Tanveer, Zainab Fatima, **Shehnila Zardari** and David Guerra-Zubiaga. "An In-Depth Analysis of Domain Adaptation in Computer and Robotic Vision" *Applied Sciences* 13, no.

- 23: 12823. (JCR Impact Factor: 2.7) (W Category)
- 9 Alam, Sana, **Shehnila Zardari**, and Jawwad Ahmed Shamsi. "Blockchain-based trust and reputation management in SIoT." *Electronics* 11, no. 23 (2022): 3871. **JCR Impact Factor (2.690) (W Category)**
 - 10 Alam, Sana, **Shehnila Zardari**, Shaheena Noor, Shakil Ahmed, and Haralambos Mouratidis. "Trust management in social internet of things (SIoT): a survey." *IEEE Access* 10 (2022): 108924-108954. **JCR Impact Factor (3.476) (W Category)**
 - 11 **Shehnila Zardari**, Sana Alam, Hamad A. Al Salem, Mana S. Al Reshan, Asadullah Shaikh, Aneeq F.K. Malik, Muhammad Masood ur Rehman, and Haralambos Mouratidis. 2022. "A Comprehensive Bibliometric Assessment on Software Testing (2016–2021)" *Electronics* 11, no. 13: 1984. **JCR Impact Factor (2.690) (X Category)**
 - 12 Sana Alam, **Shehnila Zardari**, Jawwad Ahmed Shamsi (2022). Comprehensive Three Phase Bibliometric Assessment on Blockchain (2012-2020). *Library Hi Tech*. **JCR Impact Factor (2.357) (W Category)**.
 - 13 Waseemullah Nazir, Fatima, Zainab, **Shehnila Zardari**, Muhammad Fahim, Maria Andleeb Siddiqui, Ag Ibrahim, Asri Ag, Kashif Nisar, and Laviza Falak Naz. "A Novel Approach for Semantic Extractive Text Summarization." *Applied Sciences* 12, no. 9 (2022): 4479. **JCR Impact Factor (2.679) (W Category)**
 - 14 Zainab Fatima, Muhammad Hassan Tanveer, Waseemullah Nazir, **Shehnila Zardari**, Laviza Falak Naz, Hina Khadim, Noorah Ahmed, Midha Tahir (2022). Production plant and Warehouse automation with IoT and Industry 5.0. *Applied Sciences*. **JCR Impact Factor (2.679) (W Category)**
 - 15 Sana Alam, **Shehnila Zardari**, Muneera Bano (2021). Software Engineering and 12 Prominent Sub-Areas: Comprehensive Bibliometric Assessment on 13 Years (2007 - 2019). *IET Software*. **JCR Impact Factor (1.258)**
 - 16 **Shehnila Zardari**, M.Ajmal Sawand, Najeed A. Khan. Dealing with Cloud Adoption Risks: A Goal-Oriented Requirements Negotiation Approach. *International Journal of Computer Science and Information Security* Vol. 14 (9), pp. 884-887, ISSN: 1947-5500. **ISI indexed. SCI Impact Factor (0.519)**
 - 17 **Shehnila Zardari**, Mohsin Ali Memon, Najeed A. Khan. Systematic Analysis of Risks in Cloud Architecture. *International Journal of Computer Science and Information Security* Vol. 14 (11), ISSN:1947-5500. **ISI indexed. SCI Impact Factor (0.519)**
 - 18 Najeed A. Khan, **Shehnila Zardari**, Shabeen Khan, Sehrish Saeed. A Method for Tumour Detection on Brain MRI Image by implementing SVM. *International Journal of Computer Science and Information Security* Vol. 14 (8), ISSN: 1947-5500. **ISI indexed. SCI Impact Factor (0.519)**
 - 19 Sunny Katyara, Madad Ali Shah, **Shehnila Zardari**, Bhawani Shankar Chowdhry, Wanod Kumar. WSN Based Smart Control and Remote Field Monitoring of Pakistan's Irrigation System Using SCADA Applications. *Wireless Personal Communications. Springer. Volume 95 (2)*. ISSN: 0929-6212. **ISI indexed. JCR listed. Impact Factor (0.701)**
 - 20 M. Ajmal Sawand, Najeed A. Khan, **Shehnila Zardari**. Combining Weak DFAs to Build Strong Hypothesis Using AdaBoost Classification Algorithm. *International Journal of Computer Science and Information Security* Vol. 14 (9), pp. 894-899. ISSN: 1947-5500. **ISI indexed. SCI Impact Factor (0.519)**
 - 21 Najeed A. Khan, Saman Ali, **Shehnila Zardari**, Yusra Adnan, Sehrish Saeed, Saba Hassan Shamim. Unsupervised Cancer Detection using Computer Vision Techniques. *International Journal of Computer Science and Information Security* Vol. 14 (10), pp. 724-732. ISSN: 1947-5500. **ISI indexed. SCI Impact Factor (0.519)**
 - 22 Syeda Uzma Gardazi, **Shehnila Zardari**. Realizing Compliance Tactics to Support Authentication: Bridging Gap Between Software Architecture and Regulatory Requirements. *International Journal of Computer Science and Network Security* Vol. 17 (6), ISSN: 1738-7906. **ISI indexed.**
 - 23 Najeed A. Khan, **Shehnila Zardari**, A. A. Shaikh, Masood Rafi, Sana Shaukat. Computer Vision Based Displacement Measurement of Shake Table. *International Journal of Computer Science and Network Security* Vol. 17 (5), ISSN: 1738-7906. **ISI indexed.**

- 24 Asif Ali Laghari, Hui He, **Shehnila Zardari**, Muhammad Shafiq. Systematic Analysis of Quality of Experience (QoE) Frameworks for Multimedia Services. *International Journal of Computer Science and Network Security* Vol. 17 (6), ISSN: 1738-7906. **ISI indexed.**

Articles in Peer-reviewed National Journals

- 25 **Zardari, Shehnila**, Shar, N. A., Chohan, A., & Majeed, A. (2024). Targeting Chromosome 21 Gene Over-Expression: A Novel Approach to Prevent Health Complications in Individuals with Down Syndrome. *International Journal of Endorsing Health Science Research*, 12(4), 236-247. **HEC Recognized "Y" Category Journal.**
- 26 Alam, Sana, **Shehnila Zardari**, Mohammad Abbas, Nool Ul Huda, and Muhammad Asghar Khan. "The Impact of Data Mining on Digital Libraries–A bibliometric Study." *VFAST Transactions on Software Engineering 11*, no. 4 (2023): 124-137. **HEC Recognized "Y" Category Journal.**
- 27 Alam, Sana, **Shehnila Zardari**, Umme Laila, Muhammad Abbas, Kausar Shaheen, Sidra Fatima, and Syed Affan Ahmed. "SWEBoK-based Bibliometric Analysis of Software Engineering." *Journal of Independent Studies and Research Computing* 22, no. 1 (2024): 1-24. **HEC Recognized "Y" Category Journal.**
- 28 Zeeshan Bhatti, Imdad Ali Ismaili, **Shehnila Zardari**, Waseem Javaid Soomro, Abdul Waheed Mahesar. Design and Development of Unicode based Sindhi language Thesaurus. *Sindh University Research Journal (Science Series)*, Vo.1 48 (4). ISSN: 1813-1743 **ISI indexed. HEC Recognized "X" Category Journal**
- 29 Rahat Ali Khan, Shahzad Memon, **Shehnila Zardari**, Lachman Das Dhomeja, Muhammad Usman. Transposition Technique for Minimization of Path Loss in Wireless On-Body Medical Sensors. *Sindh University Research Journal (Science Series)*, Vol. 48 (4). ISSN: 1813-1743. **ISI indexed. HEC Recognized "X" Category Journal**
- 30 Zahoor Hussain, Shahzad Memon, **Shehnila Zardari**, Raza Hussain Shah, Zulfiqar Ali Bhutto. Systematic Analysis of Smart Meter Technologies and Their Implementation Challenges in Pakistan. *Science International*, Vol. 28 (4), pp.113-120. ISSN:1013-5316. **ISI indexed. HEC Recognized "Y" Category Journal**
- 31 Ayesha Amir Siddiqi, Ghous Baksh Narejo, **Shehnila Zardari**, Mashal Tariq, Shehla Andleeb. Application of Image Processing Algorithms for Brain Tumor Analysis in 2D and 3D Leading to Tumor's Positioning in Skull: Overview. *Mehran University Research Journal of Engineering & Technology*, Vol.36 (1). ISSN: 0254-7821. **HEC Recognized "X" Category Journal.**
- 32 Ghous Baksh Narejo, Fawad Azeem, **Shehnila Zardari**. An Energy Policy Analysis and Proposed Remedial Actions to Reduce Energy Crises in Pakistan. *Mehran University Research Journal of Engineering & Technology*, Vol. 36 (2), ISSN: 0254- 7821. **HEC Recognized "X" Category Journal.**
- 33 Saba Feroz Memon, Mohsin Ali Memon, **Shehnila Zardari**. "Blind's Eye: Employing Google Directions API for Outdoor Navigation of Visually Impaired Pedestrians. *Mehran University Research Journal of Engineering & Technology*, Vol. 36 (3). ISSN: 0254-7821. **HEC Recognized "X" Category Journal.**
- 34 Zeeshan Bhatti, Imdad Ali Ismaili, **Shehnila Zardari**, Hafiz Abid Mahmood Malik, Mostafa Karbasi. Procedural Animation of 3D Humanoid Characters Using Trigonometric Expressions. *Bahria University Journal of Information and Communication Technology*, Vol. 9 (2), ISSN: 2304-7593. **HEC Recognized "Y" Category Journal.**
- 35 Nisar Ahmed Memon, Fatima Abbasi, **Shehnila Zardari**. Glyph Identification and Character Recognition for Sindhi OCR. *Mehran University Research Journal of Engineering & Technology*. Vol 36(4). ISSN:0254-7821. **HEC Recognized "X" Category Journal.**
- 36 Parus Khuwaja, Sunder Ali Khowaja, **Shehnila Zardari**, Imdad Ali Ismaili. The effect of exchange rate volatility on current price and transitional behavior of brokers: A perspective from Agent-based modeling using financial market model. *Sindh University Research Journal (Science Series)*. Vol. 50 (002). ISSN: 1813-1743 **ISI indexed. HEC Recognized "X" Category Journal**

- 37 Mukhtiar Ali Unar, David J Murray-Smith, **Shehnila Zardari**, and Euan W. McGookin. Simulation Studies Relating to Rudder Roll Stabilization of a Container Ship Using Neural Networks. *Mehran University Research Journal of Engineering and Technology*. Vol. 38 (2). ISSN: 0254-7821. **ISI Indexed. HEC Recognized "X" Category Journal.**

Articles in Refereed Conferences

- 38 Haider, Warda, **Shehnila Zardari**, Shiza Riaz Memon, and Muhammad Aamir. "Cache Algorithms for Software Defined Network Efficiency: An Analytical Approach." In 2024 Global Conference on Wireless and Optical Technologies (GCWOT), pp. 1-7. IEEE, 2024.
- 39 **Zardari, Shehnila**, Nisar Ahmed Shar, Maria Munawwar, Ume-Hani Usman, Zeba Shabbir, and Mahrukh Khan. "Early-Stage Breast Cancer Prediction Using Image Processing." In 2024 4th International Conference on Innovations in Computer Science (ICONICS), pp. 1-8. IEEE, 2024.
- 40 **Shehnila Zardari**, Nida Nisar, Zainab Fatima, and Lubna Luxmi Dhirani. "IoT- assets taxonomy, threats assessment and potential solutions." In 2023 Global Conference on Wireless and Optical Technologies (GCWOT), pp. 1-8. IEEE, 2023.
- 41 **Shehnila Zardari**, Rami Bahsoon, Aniko Ekart. Cloud Adoption: Prioritizing Obstacles and Obstacles Resolution Tactics Using AHP. Requirements Engineering Track, *The 29th ACM Symposium On Applied Computing (ACM SAC)*, Gyeongju, Korea, March 2014. [Selection rate: 24%]

Book Chapters

- 42 **Shehnila Zardari**, Funmilade Faniyi, Rami Bahsoon. Using Obstacles for Systematically Modelling, Analysing and Mitigating Risks in Cloud Adoption. In *the book on Aligning Enterprise, System and Software Architectures*. IGIGlobal. ISBN13: 9781466621992 October 2012.
- 43 **Shehnila Zardari**, Funmilade Faniyi, Rami Bahsoon. Using Obstacles for Systematically Modelling, Analysing and Mitigating Risks in Cloud Adoption. In *the book on Cloud Technology: Concepts, Methodologies, Tools, and Applications*. IGIGlobal. ISBN13: 9781466665392, 2015.

Peer- Reviewed Workshop Papers

- 44 **Shehnila Zardari**, Rami Bahsoon. Cloud Adoption: A Goal-Oriented Requirements Engineering Approach. In *the Proceedings of the ACM/IEEE International Workshop on Cloud Software Engineering, the ACM/IEEE 33rd International Conference on Software Engineering (ICSE)*, Hawaii, USA May 2011.

Media Coverage & Blogs

- * **Shehnila Zardari. Celebrations and Questions: 100 Years of Engineering Education in Sindh. Published by DAWN. 28 March, 2021**
- * **Shehnila Zardari. Trouble in the cloud leaves businesses tied to their servers. Published by The Conversation. 15 May 2014**
- * **Shehnila Zardari. The sorry state of research at our universities and how to fix it. Published by DAWN.com. 02 November, 2014**

Selected Talks

- ICCSA** *Blockchain-Based Trust Management Frameworks in Crowdfunding*. Invited talk in the 3rd International Conference on Computer Science and Applications, 15 January 2026, Thar Institute of Engineering Sciences and Technology, NED University of Engineering and Technology, Islamabad.
- ICISCT** *Navigating Trust in Industry 4.0 and 5.0: Challenges, Vulnerabilities, and the Path Forward*. Invited talk in the 3rd International Conference on Information Sciences and Communication Technology, 16 April 2025, University of Karachi.
- WRE** *Digital Twins: Asset Taxonomy, Risks and Potential Solutions*. Keynote Talk in the 6th International Workshop on Functional Reverse Engineering of Machine Tools, 14 December 2024, Ghulam Ishaq Khan

- Institute of Engineering Sciences and Technology.
- CCODE** *Requirements Engineering for Cloud Adoption*. Invited talk in the 2nd International Conference on Communication, Computing and Digital System, 6 March 2019, Bahria University Islamabad.
- SECLOUD** *Cloud adoption: a goal-oriented requirements engineering approach*, ACM/IEEE International Workshop on Cloud Software Engineering, the ACM/IEEE 33rd International Conference on Software Engineering (ICSE), 22 May 2011, Hawaii, USA
- SERG** *Using Obstacles for Systematically Modelling, Analysing and Mitigating Risks in Cloud Adoption*, Software Engineering Research Group, 15 November 2011, University of Birmingham, UK
- SERG** *Cloud Adoption: Prioritizing Obstacles and Obstacles Resolution Tactics Using AHP*, Software Engineering Research Group, 16 October 2012, University of Birmingham, United Kingdom
- 3MT** *Cloud adoption: a goal-oriented requirements engineering approach*, Birmingham Three Minute Thesis Competition, 24 Sep 2013, University of Birmingham, UK.

Experience

Managerial Experience

- October' 22 to date** Chairperson of the Department of Software Engineering at NED University of Engineering and Technology, Pakistan
- July'22 to date** Foreign students' coordinator, NED University of Engineering and Technology

Research Experience

- August '10 to January'16** **Doctoral Researcher**, *University of Birmingham*. Supervised by Rami Bahsoon, working on requirements engineering for cloud.

Teaching Experience

- January'22 to date** **Professor**, *NED University of Engineering and Technology, Pakistan*, teaching Software Requirements Engineering, Software Project management, Software Design and Architecture, and Research Methodologies. Developed syllabus and overall course structure, and administered all grades
- March'18 to Jan'22** **Associate Professor**, *NED University of Engineering and Technology, Pakistan*, taught Software Requirements Engineering, Software Project management, Software Quality Assurance, Research Methodologies, Software Measurements and Metrics, Software Requirements Analysis and Specifications, and Software Design and Architecture. Developed syllabus and overall course structure, and administered all grades.
- January' 16 to March'18** **Assistant Professor**, *NED University of Engineering and Technology, Pakistan*, taught Assembly Language Programming, Software Requirements Engineering, Software Engineering, Software Designed Architecture, Software Project Management. Developed syllabus and overall course structure, and administered all grades.
- September'13 to June'15** **Tutor for Artificial Intelligence module**, *University of Birmingham*, assignment preparation, invigilation, evaluate and provide feedback on student progress
- Sept'13 to Feb'14** **Tutor for Commercial Computing module**, *University of Birmingham*, Evaluate and provide feedback on student progress.

- Junly'09 to July'10** **Assistant Professor**, NED University of Engineering and Technology, Pakistan, taught Programming Languages (C Programming) and Operating systems.
Developed syllabus and overall course structure, and administered all grades.
- July'07 to June'09** **Lecturer**, *NED University of Engineering and Technology, Pakistan*, taught Assembly Language Programming and Object Oriented Programming.
Developed syllabus and overall course structure, and administered all grades.
- **Key Responsibilities** at *NED University of Engineering and Technology, Pakistan*, include.
 - Teaching students through multiple means-lectures, practical, tutorials, discussions, seminars
 - Maintaining constant contact with students, advising them on academic matters and supervising their extra-curricular activities
 - Assisting in curriculum preparation, conducting exams, organizing library/laboratories and other co-curricular activities
 - Handing out assignments to students, conducting regular tests and maintaining performance records of students
 - Preparing teaching schedule for each academic year
 - Performing duties related to holding of examinations
 - Remained class advisor of first year and second year students.
 - Regularly organizing seminars and workshops for students.
 - Supervising final year projects.
 - Member of the admission committee for masters' programme
 - Member of the admission committee for PhD programme.
- April'06 to June'07** **Lecturer**, *Institute of Modern Sciences and Arts, Hyderabad* taught Assembly Language Programming, Object Oriented Programming, Operating Systems and Software Engineering.
Developed syllabus and overall course structure, and administered all grades.

Funding

- SHEC** 4.0 million PKR were awarded by Sindh HEC for the project “Sindh Biodiversity Observatory”
- IGNITE** Ten projects under my supervision were awarded the funding by IGNITE from 2017 onwards.
- NED UET** 0.5 million PKR were awarded for the project titled “*Digital Twin Security Risk Awareness: A Gamification Framework for Industry 5.0 Implementation*”. Ongoing Project
- MoST** 1.7 million PKR were awarded for the project titled “*Effective Bandwidth Management in 5G Cellular Networks by Integrating Software Defined Network Based Architecture*”. Ongoing Project
- MoST** 1.26 million PKR were awarded for the project titled “*Efficient Domain Adaptation Platform for Robotics and Automation Applications*”. Ongoing Project
- NED UET** 0.7 million PKR were awarded for the project titled “*Blockchain Based Trust and Reputation Management System in Social Internet of Things*”. The duration of the project was from January 2021 to December 2022.
- NEDAASC** Rs. 105000 were awarded to a final year project under my supervision by NED Alumni Association of Southern California in 2020.

Fellowships and Awards

- 2025** Awarded Life Fellowship by the Institute of Engineers Pakistan
- 2024** Best Teacher Award by NED Alumni Association of Southern California
- 2023** Best Researcher Award by NED University
- 2022** Academic Excellence Award by Sindh HEC
- 2010–2014** Earned merit-based scholarship by Government of Pakistan to pursue a PhD
- 2011** Awarded the prestigious ACM SIGSOFT CAPS funding for attending a conference in Hawaii.
- 2000** Received presidential merit scholarship in college on outstanding academic performance

Professional Memberships

Life member of Pakistan Engineering Council. Registration Number: COMP/04119.

Languages

English, Sindhi, Urdu

Citizenship

Pakistan