

## Curriculum Vitae

**Name:** Dr. Shabana Mehfuz

**Designation:** Professor

**Address:** Department of Electrical Engineering, Faculty of Engineering and Technology, Jamia Millia Islamia, New Delhi.

### 1. TOPIC OF Ph.D. THESIS

“Quality of Service Issues in Mobile AdHoc Networks”

### 2. CURRENT RESEARCH INTEREST

Cloud Computing, Application of Computational Intelligence, Artificial Intelligence, Internet of Things, Wireless Sensor Networks

### 3. AWARDS/SCHOLARSHIPS RECEIVED:

- Secured **First** position in the order of merit in B.Tech. (Electrical Engineering).
- International Inspirational Women Award 2020 for Best Performer in Government Award by GISR Foundation.
- National award for Excellence in Education 2021 in the AMP organization's university/college teachers category.
- Best paper award at INDICON 2015 held in New Delhi.

### 4. VISITS TO FOREIGN INSTITUTIONS

Attended Course on “Distributed Laboratory Instrumentation Systems” at ICTP, Trieste, Italy (22nd Nov.- 17th Dec., 2004).

### 5. RESEARCH PAPERS PUBLISHED:

**Citation Indices:** <https://scholar.google.com/citations?user=Sc8Vj08AAAAJ>  
<https://www.scopus.com/authid/detail.uri?authorId=24465237900>

<b>i. International Journals:</b>	<b>72</b>
<b>ii. National Journals:</b>	<b>7</b>
<b>iii. International Conferences/Seminars/Workshops:</b>	<b>66</b>
<b>iv. National Conferences/Seminars/Workshops:</b>	<b>13</b>
<b>v. Book Chapters/Articles</b>	<b>8</b>
<b>vi. Books:</b>	<b>2</b>
<b>vii. Patents Awarded/Published:</b>	<b>7</b>

(For details see Annexure-I)

### 6. CONFERENCES/SEMINARS/WORKSHOPS ATTENDED:

**INDIA:** 33

**ABROAD:** 1

### 7. CONFERENCE ORGANISED:

**Publicity Chair:** 6th International Conference on Emerging Technologies: Micro to Nano (ETMN-2024), Nov. 22-23, 2024

**Track Chair** for the track, Artificial Intelligence, Internet of Things and Cloud Computing, International Conference on Recent Advances in Electrical, Electronics and Digital Healthcare Technologies, 2023, Technically Sponsored by IEEE Delhi Section

**Track Chair** for the track, Applications of Image Processing and Computer Networking in Power Electronics and Automation, International Conference on Power Electronics, Control & Automation, 2019, Technically Sponsored by IEEE Delhi Section

**Track Chair** for the track Computer and Information Technology, IEEE International Conference INDICON 2015

**8. REFRESHER/SHORT-TERM COURSES ATTENDED: 10**

**9. RESEARCH PROJECTS**

See Annexure - I

**10. RESEARCH GUIDANCE**

**Ph.D.: Ongoing: 12      Awarded/Submitted: 11**

See Annexure I for details

**11. TEACHING**

**Courses taught at B.Tech. level:**

Introduction to Computer Networks & Cyber Security, Programming Languages, Artificial Intelligence, Computer Architecture, Switchgear and Protection, Basic Electrical Engineering, AI & Soft Computing

**Courses taught at M.Tech. level:**

Intelligent Techniques, Digital Communication, Wireless Sensor Networks.

**12. MEMBERSHIPS IN TECHNICAL SOCIETIES**

- IEEE, Senior Member
- Ex-officio member, IEEE Delhi Section executive committee-2005.
- Chairperson, GOLD affinity group of IEEE Delhi Section.
- Executive member of Jamia Engineering Alumni Association.
- Co-ordinator, WIE affinity group, Jamia Chapter, IEEE Delhi Section.
- Life Member, ISTE
- Member, IE
- Life Member, CSI

**13. Major Administrative Responsibilities Inside/Outside University**

- Chairperson, Students Grievance Redressal Committee, Faculty of Engineering & Technology (since 2023)
- Nodal Chief Public Information Officer, Jamia Millia Islamia (Since 2022)
- Nodal Officer, Jamia Millia Islamia, ACITE Doctoral Fellowship Scheme (Since 2022)
- Mentor & Nodal Officer, Jamia Millia Islamia, AICTE Prime Minister Special Scholarship Scheme. (2018-2024)
- President, Basket Ball, University Sports Committee, JMI (2022-2024)
- AICTE Certified Mentor for Teachers of Higher Education Institutes
- Review Board, Indo-Canadian Sashtri Institute, New Delhi
- Area Advisory Board Member, Department of IT, Amity University
- Research Advisory Committee Member, DTU and NSUT

## Annexure-I

### Publications in International Journals:

1. S. Ahmad, M. Arif, Shabana Mehfuz, J. Ahmad, and M. Nazim, "Deep Learning-Based Cloud Security: Innovative Attack Detection and Privacy-Focused Key Management," *IEEE Transactions on Computers*, 2025, pp. 1-12, doi: 10.1109/TC.2025.3547150. (SCI Impact factor: 3.6)
2. Abrar Rasool Dar , Ahteshamul Haque, Mohammed Ali Khan, Varaha Satya Bharath Kurukuru and Shabana Mehfuz, "On-Board Chargers for Electric Vehicles: A Comprehensive Performance and Efficiency Review," *Energies*, 17(18), pp. 4534, 2024. (SCIE, Impact factor: 3)
3. Shabana Urooj , Mudasir Ahmad Dar , Shabana Mehfuz , Wafaa Shoukry Saleh, "Optimization of Deep Neural Networks for Enhanced Efficiency in Small Scale Autonomous Vehicles", *Traitement du Signal*, Vol. 41, No. 1, February, 2024, pp. 469-476. (SCIE, Impact factor: 1.9)
4. M. Weqar, **Shabana Mehfuz**, D. Gupta and S. Urooj, "Adaptive Switching Based Data-Communication Model for Internet of Healthcare Things Networks," in *IEEE Access*, vol. 12, pp. 11530-11548, 2024, doi:10.1109/ACCESS.2024.3354722 (SCIE, Impact Factor: 3.9)
5. S. Ahmad, M. Arif, J. Ahmad, M. Nazim, and **Shabana Mehfuz**, "Convergent Encryption Enabled Secure Data Deduplication Algorithm for Cloud Environment," *Concurrency and Computation: Practice and Experience*, vol. 2024, p. e8205, 2024, doi: 10.1002/cpe.8205. (SCI Impact factor: 1.5)
6. S. Ahmad, J. O. Ogala, F. Ikpotokin, Shabana Mehfuz, "Enhanced CNN-DCT Steganography: Deep Learning-Based Image Steganography Over Cloud," *SN Computer Science*, vol. 5, p. 408, 2024, doi: 10.1007/s42979-024-02756-x. (Scopus Indexed)
7. Shahnawaz Ahmad, **Shabana Mehfuz**, Shabana Urooj, S. et al., "Machine learning-based intelligent security framework for secure cloud key management", *Cluster Comput* (2024). <https://doi.org/10.1007/s10586-024-04288-8>. (SCIE, Impact Factor = 4.4)
8. Haq, Z. A., Jaffery, Z. A., & Mehfuz, S, Precision harvesting: comparative analysis of machine learning and generative AI-based classifiers for guava fruit maturity assessment using thermal imaging. *CyTA-Journal of Food*, 22(1), 2024. (SCI Impact factor: 2.1)
9. Haq, Z. A., Jaffery, Z. A., & Mehfuz, S. Integrated Approach for Defect Detection and Grading of Apples: Thermal Imaging and Adaptive Neuro-Fuzzy Inference System for Enhanced Quality Assessment. *Traitement du Signal*, 2024, 41(6). (SCI Impact factor: 1.1)
10. Shaheen Parveen, Obaidur Rahman, M. Ajmal Khan, Javid Ali, Shabana Mahfuz, Tarikul Islam, Shakeb A Khan, "Detection of Insulation Degradation byproducts in Transformer Oil", *International Journal of Smart Sensing and Intelligent Systems*, Issue 1, Vol 17, 2024, pp 1-13. (Scopus)
11. Shahnawaz Ahmad, Iman Shakeel, **Shabana Mehfuz**, Javed Ahmad, "Deep learning models for cloud, edge, fog, and IoT computing paradigms: Survey, recent advances, and future directions", *Computer Science Review*, Volume 49, 2023, 100568, ISSN 1574-0137, <https://doi.org/10.1016/j.cosrev.2023.100568>. (SCIE, Impact Factor = 12.9)
12. Shahnawaz Ahmad , **Shabana Mehfuz S**, Javed Beg, "An efficient and secure key management with the extended convolutional neural network for intrusion detection in cloud storage", *Concurrency Computation Practice and Experience* 2023; e7806. doi: 10.1002/cpe.780. (SCIE, Impact Factor = 1.831)
13. Shabana Urooj, Sonam Lata, Shahnawaz Ahmad, **Shabana Mehfuz**, S Kalathil, "Cryptographic Data Security for Reliable Wireless Sensor Network", *Alexandria Engineering Journal*, Volume 72, 2023, Pages 37-50, ISSN 1110-0168, <https://doi.org/10.1016/j.aej.2023.03.061> (SCIE, Impact Factor = 6.626)

14. Shahnawaz Ahmad, **Shabana Mehfu**, Javed Beg., "Hybrid cryptographic approach to enhance the mode of key management system in cloud environment", J Supercomputing (2022). <https://doi.org/10.1007/s11227-022-04964-9>, (SCI, Impact Factor = 2.557.)
15. Christian Emeka Okafor, Sunday Iweriolor, Okwuchukwu Innocent Ani, Shahnawaz Ahmad, **Shabana Mehfu**, Godspower Onyekachukwu Ekwueme, Okechukwu Emmanuel Chukwumanya, Sylvester Emeka Abonyi, Ignatius Echezona Ekegwu, Okechukwu Peter Chikelu, Advances in machine learning-aided design of reinforced polymer composite and hybrid material systems, Hybrid Advances, Volume 2,2023, 100026, ISSN 2773-207X, <https://doi.org/10.1016/j.hybadv.2023.100026>.
16. Shahnawaz Ahmad, **Shabana Mehfu**, Fateh Mebarek-Oudina, Javed Beg, "RSM analysis based cloud access security broker: a systematic literature review", Cluster Computing, Springer, May 2022. DOI: <https://doi.org/10.1007/s10586-022-03598-z>. (SCIE, Impact factor: 2.303).
17. Mariyam, Farhana, **Mehfu**, **Shabana**, Sadiq, Mohd., "RAGOSRA: Rough attributed goal-oriented software requirements analysis method", Journal of Intelligent Fuzzy Systems. pp. 1-11, 2023. DOI: 10.3233/JIFS-221300, (SCIE Indexed, Impact Factor: 1.737).
18. Aakib Jawed Khan and **Shabana Mehfu**, "Cloud Access Control Mechanism Based on Fuzzy Logic User Access Trust Model", Computer System Science and Engineering, Vol 44, No 1, 2023, ISSN 0267-6192 (print) (SCIE, Impact factor: 4.397)
19. Shahnawaz Ahmad, **Shabana Mehfu**, Javed Beg, "Cloud security framework and key management services collectively for implementing DLP and IRM", Materials Today, Volume 62, Part 7, 2022, Pages 4828-4836. Scopus: ISSN no: 22147853.
20. Shahnawaz Ahmad, **Shabana Mehfu**, Javed Beg, "Assessment on potential security threats and introducing novel data security model in cloud environment", Materials today, Volume 62, Part 7, 2022, Pages 4909-4915, Scopus: ISSN no: 22147853.
21. Sonam Lata, **Shabana Mehfu**, Shabana Urooj, "Secure and Reliable WSN for Internet of Things: Challenges and Enabling Technologies" IEEE Access, volume 9, 2021, doi: 10.1109/ACCESS.2021.3131367 (SCI, Impact factor: 3.367) ISSN no: 2169-3536.
22. Aakib Jawed Khan and **Shabana Mehfu**, "Big-data Driven Approaches in Materials Science on Cloud Storage API through Optimal Homomorphic Encryption", Materials today, May 2021. Scopus: ISSN no: 22147853.
23. Naved Alam, **Shabana Mehfu**, "Semi-distributed resource allocation and power quantization control algorithm for device-to-device network", International Journal of Communications Systems, Wiley, March 2021, pp 1-15 (doi.org/10.1002/dac.4820) SCI impact factor: 1.319, ISSN no:
24. Shahnawaz Ahmad, **Shabana Mehfu**, Javed Beg, Nadeem Ahmad Khan, and Afzal Husain Khan, "Fuzzy cloud based COVID-19 diagnosis assistant for identifying affected cases globally using MCDM", Materials today: Proceedings, Scopus, January-2021. ISSN no: 22147853
25. Aakib Jawed Khan and **Shabana Mehfu**, "Secure Access Control Model for Cloud Computing Environment with Fuzzy Max Interval Trust Values" International Journal of Advanced Computer Science and Applications (IJACSA), 11(8), October 2020. <http://dx.doi.org/10.14569/IJACSA.2020.0110867>, Scopus indexed.ISSN no 2156-5570
26. Shahnawaz Ahmad, **Shabana Mehfu**, and Javed Beg, "A Genetic Algorithm based Key Management Approach for Enhancing Data Security in Cloud Environment", International Journal of Advanced Trends in Computer Science and Engineering 9(5):8943-8951, ISSN: 2278 – 3091, September 2020. (Scopus Indexed)
27. Shahnawaz Ahmad, Nazim Ali Khan, **Shabana Mehfu**, "Impact and Challenges of Coronavirus on Daily Life and Living: A Cloud Based Communication Assistant during the COVID-19Pandemic", International Journal for Modern Trends in Science and Technology, UGC Journal Id: 43137, Volume 6, Issue 9, PP-91-100, Septmber-2020, India
28. Sonam Lata, Shabana Mehfu, S. Urooj and F. Alrowais, "Fuzzy Clustering Algorithm for Enhancing Reliability and Network Lifetime of Wireless Sensor Networks," in IEEE Access, vol. 8, pp. 66013-66024, 2020, doi:10.1109/ACCESS.2020.2985495. (SCI, Impact factor: 4.64) ISSN no: 2169-3536.

29. Sonam Lata, **Shabana Mehfu**, Shabana Urooj, Asmaa Ali, Nidal Nasser, "Disjoint Spanning Tree Based Reliability Evaluation of Wireless Sensor Network", in MDPI Sensors, 2020, <https://doi.org/10.3390/s20113071>. (SCIE, Impact factor: 3.275), ISSN No.: 1424-8220
30. Md Ashar Alam, **Shabana Mehfu**, Md Shams Tabraiz Alam, Tazeem A Khan, "Comparative Study of Fuzzy Logic and ANFIS based MPPT of PV Systems", Journal of Natural Remedies, volume 21, Issue 5(S1), pp 40-50, 2020
31. Mohd Asim Aftab, Saeed Roostae, S.M. Suhail Hussain, Ikbali Ali, Mini S. Thomas, **Shabana Mehfu**, "Performance evaluation of IEC 61850 GOOSEbased inter-substation communication for accelerated distance protection scheme", IET Generation, Transmission & Distribution, 12(18), pp. 4089-4098, 2018. (SCI, impact factor: 2.862)
32. Usha Tiwari, **Shabana Mehfu**, "An adaptive entropy-based Data compression technique for Wireless Sensor Networks" in Journal of Fundamental and Applied Sciences, indexed in ESCI, ISSN1112-9867, vol.10, April 2018.
33. Usha Tiwari, **Shabana Mehfu**, "An efficient tag generation-based data compression algorithm for wireless sensor network", in International Journal of Engineering Research and Technology. ISSN 0974-3154 Volume 11, Number 1 (2018), pp. 117-143 a SCOPUS-indexed journal.
34. Usha Tiwari, Monika Jain, **Shabana Mehfu**, "Handwritten character recognition" in LNEE- Lecture note in Electrical Engineering a Advances in System Optimization and Control, SCOPUS indexed journal by Springer Publications, 2018.
35. Gauri Katiyar, Ankita Katiyar, **Shabana Mehfu**, "Off-Line Handwritten Character Recognition System Using Support Vector Machine", American Journal of Neural Networks and Applications, 2017; 3(2), pp 22-28.
36. Saeed Rastoo, Mini S. Thomas, **Shabana Mehfu**, "Experimental Studies on Impedance Based Fault Location for Long Transmission Lines", Journal of Protection and Control of Modern Power Systems, Springer, 2017.
37. Rai R., Sahoo G., **Shabana Mehfu**. "Effect of VM Selection Heuristics on Energy Consumption and SLAs During VM Migrations in Cloud Data Centers", Advances in Computational Intelligence. Advances in Intelligent Systems and Computing, vol 509. 2017 Springer.
38. Gauri katiyar, **Shabana Mehfu**, "A hybrid recognition system for off-line handwritten characters", SpringerPlus, ISSN: 2193-1801, 5(357), 2016, pp. 1-18 (SCI, Impact factor: 0.447).
39. Reetu, **Shabana Mehfu** and Parmod Kumar "Intelligent decision support algorithm for distribution system restoration", *Springer Plus, Springer*, (DOI 10.1186/s40064-016-2810-4), July 2016, Impact factor - 0.982. (SCI, impact factor: 0.447).
40. Sumit Kumar, **Shabana Mehfu**, "Efficient Fuzzy Logic Based Probabilistic broadcasting for mobile ad hoc network", International Journal of Computational Intelligence Systems, Vol. 9, No. 4, pp. 666-675, June 2016. (Impact factor =0.391, Taylor & Francis SCI /Scopus Indexed)
41. Sumit Kumar, **Shabana Mehfu**, "Intelligent probabilistic broadcasting in mobile ad hoc network: A PSO approach", Journal of Reliable Intelligent Environments, Vol. 2, Issue 2, pp. 107-115, July 2016. (Springer)
42. Sumit Kumar, **Shabana Mehfu**, "Energy Efficient Probabilistic broadcasting for mobile ad hoc network" Journal of the Institution of Engineers (India): Series B, (2016), doi: 10.1007/s40031-016-0265-1. (Springer)
43. Saeed Rastoo, Mini S. Thomas, **Shabana Mehfu**, "Laboratory Investigation of Fault Location in transmission Lines", Journal of Electrical Engineering, Electronics and Computer Science (2.2), 2016.
44. Rashmi Rai, G.Sahoo, **Shabana Mehfu**, "Advancement in Cloud Migration: A Systematic Literature Review", International Journal of Communication Networks and Distributed Systems (Inderscience), 2015.
45. Rashmi Rai, G.Sahoo, **Shabana Mehfu**, "Migrating on Premise Application to Clouds: Drivers and Challenges", Advance Science Letters (American Scientific Publishers), 2015.
46. Munna Khan, **Shabana Mehfu**, Ghazala Parveen, "Multicompartmental Models to Assess the Body Composition of Indian Subjects and Validation of Result by Developing Prediction Equation", International Journal of Research Studies in Biosciences, ISSN: 2349-0357, vol. 3 Issue 5, May 2015, pp 209-228.
47. Rashmi Rai, G.Sahoo, **Shabana Mehfu**, "Exploring the factors influencing the cloud computing adoption: a systematic study on cloud migration", SpringerPlus, ISSN: 2193-1801, vol. 4 Issue 1, April 2015, pp. 1-12(SCI Indexed)

48. Shabana Mehfuz, Farah Rashid, "Optimal Network Configuration Using Ant Colony System Algorithm", Journal Of Computational Intelligence Systems, ISSN: 1875-6891, Taylor & Francis, vol.7, issue 6, September 2014, pp. 1074-1082.(SCI Indexed)
49. **Shabana Mehfuz**, Sumit Kumar, "Two-Dimensional Particle Swarm Optimization Algorithm for Load Flow Analysis", Journal of Computational Intelligence, Systems, ISSN: 1875-6891, Taylor & Francis, vol. 7, issue 5, September 2014, pp 973-978.(SCI Indexed)
50. Munna Khan, **Shabana Mehfuz**, Ghazala Parveen, "Interpreting Health Status of Indian Population Using Phase Angle as Health Parameter", International Journal of Engineering Research and Sciences, ISSN (Online): 2320-9364, ISSN (Print): 2320-9356, vol. 2, issue 8, August 2014, pp 45-56.
51. Munna Khan, **Shabana Mehfuz**, Ghazala Parveen, "Interpreting Health Status of Mixed Population Using BCA", Journal of Medical Sciences, ISSN 2320- 1282, Journal of Medical Sciences, Vol. 3, issue 1, March 2014, pp 1-18.
52. Munna Khan, **Shabana Mehfuz**, Ghazala Parveen, "Bioelectrical Impedance Analysis (BIA) for Assessing Tbw and Ffm of Indian Females", International Journal of Computational Engineering Research, ISSN: 2250-3005, Vol 4, Issue 3, March 2014, pp. 1-17.
53. Rashmi Rai, G.Sahoo, **Shabana Mehfuz**, Advances in Cloud Migration: A Systematic Literature Review, Asian Journal of Information Technology, ISSN: 19935994, 16823915
54. Rashmi Rai, **Shabana Mehfuz**, G. Sahoo, Efficient Migration of Application to Clouds: Analysis and Comparison, GSTF Journal on Computing (JoC), Springer, ISSN: 2010-2283, DOI: 10.5176/2251-3043\_3.3.272 Vol. 3 No. 3, Dec 2013.
55. Rashmi, G.Sahoo, **Shabana Mehfuz**, "Securing Software as a Service Model of Cloud Computing: Issues and Solutions", International Journal on Cloud Computing: Services and Architecture (IJCCSA) ISSN: 2231 - 5853, Vol.3, No.4, August 2013, pp 1-11.
56. Ghazala Parveen Khan, Munna Khan, **Shabana Mehfuz**, "Generalized Sex and Age Specific Body Composition Prediction Equations for Indian Subjects", International Journal of Computational Engineering Research, ISSN: 2250-3005, Vol. 3, Issue 12, Dec 2013, pp 1-15.
57. Ghazala Parveen Khan, Munna Khan, **Shabana Mehfuz**, "Development and validation of Prediction for Estimating Resting Energy Expenditure in Indian Subjects", IOSR Journal of Electrical and Electronics Engineering, ISSN 2278-1676, Vol. 7, Issue 2, Jul 2013, pp. 6-9.
58. **Shabana Mehfuz** , "Strategies of Swarm Intelligent Secure Routing Algorithms for MANETs", International Journal of Modern Embedded System, ISSN: 2320-9003, Volume 1, issue 2, April 2013, pp 16-20.
59. Ghazala Parveen Khan, Munna Khan, **Shabana Mehfuz**, "Comparative study of 2C molecular level, 3C water molecular level and 3C mineral molecular level of Indian subjects", International Journal of Advancement in Research and Technology, ISSN 2278-7763, Volume 2, Issue2, February-2013, pp 1-21.
60. Ghazala Parveen Khan, Munna Khan, **Shabana Mehfuz**, "Development of Bioelectrical Impedance Analysis Equations (BIA) to predict body composition of Indian Males", World Applied Programming, ISSN: 2222-2510, Vol. 3, Issue-1, Jan 2013, pp 14-33.
61. Ghazala Parveen Khan, Munna Khan, **Shabana Mehfuz**, "Developing Linear Regression Multiple Model for Indian Males and Validating the Results with BIA Analyser", Journal of Medical Sciences, ISSN 2320-1282, Vol. 1, Issue 1, Dec. 2012, pp. 12-24.
62. **Shabana Mehfuz**, "Performance Analysis and Modeling of Broadband Power Line Communications", International Journal of Advanced Research in Electronics and Communication Engineering (IJARECE), (ISSN: 2278 – 909X), Volume 1, Issue 2, August 2012.
63. Ghazala Parveen Khan, Munna Khan, **Shabana Mehfuz**, "Development of Bioelectrical Impedance Analysis Equation (BIA) to Predict Body Composition of Indian Males", Journal of Exercise Physiology, ISSN 1097-9751, Vol. 14, Issue 3, June 2011, pp. 1-21.

64. Rashmi, **Shabana Mehfu**, G.Sahoo, "A five-phased approach for the cloud migration", International Journal of Emerging Technology and Advanced Engineering (ISSN 2250-2459), Volume 2, Issue 4, April 2012.
65. Sumit Kumar, **Shabana Mehfu**, "Review of Survivable initiatives for Key Management and Access Control" International Journal of Science, Engineering & Computer Technology, ISSN 2231-508X, Volume 1, Issue 2, March 2012, pp. 186-188.
66. Gauri Katiyar, **ShabanaMehfu**, "Evolutionary Computing Techniques in Off-line Handwritten Character Recognition: A Review", UACEE International Journal of Computer Science and its Applications, Vol-1, Issue-1, [ISSN-2250-3765], 2012, pp-133-137.
67. **Shabana Mehfu**, Gauri Katiyar, "Intelligent Systems for Off-line Handwritten Character Recognition: A Review", International Journal of Emerging Technology and Advanced Engineering, Vol-2, Issue- 4, [ISSN-2250-2459], April 2012, pp-538-544.
68. Ghazala Parveen Khan, Munna Khan, **Shabana Mehfu**, "Multifrequency Bio Impedance Analysis (BIA) for Assessing TBW and FFM of Indian Females", International Transactions in Mathematical Sciences and Computers, ISSN-1814-0424, Volume-4, Jan-June 2011.
69. **Shabana Mehfu**, M. N. Doja, "Swarm Intelligent Power Aware Detection of Unauthorized and Compromised Nodes in MANETs", Journal of Artificial Evolution and Application, Article ID 263803, Vol. 2008, pp. 1-16.
70. R. Radhakrishnan, Majid Jamil, **Shabana Mehfu**, Moinuddin, "A robust routability procedure for mobile IPV6", International Journal of Computer Science & Network Security. ISSN: 1738-7906, Vol.8 No.5, May 2008.
71. Javed Beg, **Shabana Mehfu**, M. N. Doja, "SOA Based Universal Application Integration Framework", Gyan Management, International Journal of Management and Technology, Vol.2, Issue 1, 2008, pp. 100-113.
72. **Shabana Mehfu**, M. N. Doja, "Nature Inspired Energy Efficient Routing Algorithm for MANETs", International Journal of Computational Intelligence: Theory and Practice, Vol. 2, No. 2, December 2007, pp. 113-124.

#### **Publications in National Journals:**

1. M. Weqar and S. Mehfu, "Healthcare Security & Smart Authentication," National CoE Accelerating Cyber Security Technology Development and Product Entrepreneurship in the Country, Jan. 20, 2025.
2. Sonam Lata, Shabana Mehfu, Federated Learning in Healthcare: Security Challenges and Solutions," National Centre of Excellence National CoE (NCoE) Reports by Data Security Council of India, (DSCI), Jan 2025.
3. G.Sahoo, **Shabana Mehfu**, Rashmi Rai, Applications of Cloud Computing for Agriculture Sector, CSI Communications, ISSN 0970-647X Volume No. 37, Issue No. 8 , November 2013.
4. G.Sahoo, **Shabana Mehfu**, Rashmi, " Cloud Computing: Changing the Way We Communicate", Communication Express, BITS Mesra, Ranchi, Macmillan Publishers, 2012.
5. Reetu, Parmod Kumar, **Shabana Mehfu**, "Switching Sensitivity of Distribution Network for Restoration after Blackout/Partial Blackout", National Electrical Engineering Conference (NEEC-2011) on Power and Energy Systems for Tomorrow, December 2011.
6. M. N. Doja, **Shabana Mehfu**, "Challenges and Issues Faced by Secure Routing Protocols for MANETs", Communications, CSI Communications, Vol. 31, No. 4, July 2007, pp 38-41.
7. Majid Jamil, **Shabana Mehfu**, Bal Krishna, "Fuzzy Logic Based Analysis of Effect of Electrical and Physical Conditions on Electrical Parameters of ACSR Conductors", Journal of Engineering & Technology Education, vol. 1, no. 1, 2007, pp 30-37.

## Publications in International Conferences:

1. M. Weqar, S. Mehfuz and D. Gupta, "Authentication in IoT Networks via Machine Learning and Deep Learning: A Review" 2024 Fifteenth International Conference on Computing, Communication and Networking Technologies (ICCCNT), held at IIT-Mandi, in association with IEEE Electronics Packaging Society, June 24th - 28th, 2024
2. Nazneen, S., Mehfuz S., and Sadiq, M., "Elicitation and analysis of stakeholders of an information system under fuzzy environment", In 4th International Conference on Intelligent Vision and Computing, organized by National Institute of Technology Agartala, and Technically Sponsored by Soft Computing Research Society, November 23-24, pp. 1-12, 2024
3. S. Mateen, A. Haque, S. Mehfuz and Q. A. Khan, "Accelerating EV Charging: ANFIS-Controlled Pulse Charging Strategy," 2024 IEEE 4th International Conference on Sustainable Energy and Future Electric Transportation (SEFET), Hyderabad, India, 2024, pp. 1-6, doi: 10.1109/SEFET61574.2024.10717952.
4. M.Ariz, S.Mehfuz and T. Islam, "A New Method of Humidity Measurement for Smart-Grid Apparatus", in 2024 6th International Conference on Emerging Technologies: Micro to Nano (ETMN) Delhi, India, Nov-24
5. Haq, Z. A., Jaffery, Z. A., & Mehfuz, S. Machine Learning Algorithms for Multiclass Fruit Classification: A Comparative Analysis. In International Conference on Computing and Machine Learning, 2024, March. pp. 357-371.
6. S. Bhatia, Z. A. Jaffery and Shabana Mehfuz, "A Comparative Study of Wireless Communication Protocols for use in Smart Farming Framework Development," 2023 3rd International Conference on Intelligent Communication and Computational Techniques (ICCT), Jaipur, India, 2023, pp. 1-7, doi: 10.1109/ICCT56969.2023.10075696.
7. Z. A. Haq, M. Ashhad, Z. A. Jaffery and **Shabana Mehfuz**, "Infrared Imaging Technique and Multi-Input Neural Network for Potato Defect Detection," 2023 International Conference on Recent Advances in Electrical, Electronics & Digital Healthcare Technologies (REEDCON), New Delhi, India, 2023, pp. 196-200, doi: 10.1109/REEDCON57544.2023.10150501.
8. M. Kashif, I. Shakeel, Shahnawaz Ahmad and **Shabana Mehfuz**, "Enhanced Pixel Privacy: Leveraging Deep Learning for Advanced Image Steganography," 2023 7th International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC), Kirtipur, Nepal, 2023, pp. 535-541, doi: 10.1109/I-SMAC58438.2023.10290153
9. I. Shakeel, **Shabana Mehfuz** and S. Ahmad, "Implementing a Serverless Workflow using AWS Step Function," 2023 International Conference on Recent Advances in Electrical, Electronics & Digital Healthcare Technologies (REEDCON), New Delhi, India, 2023, pp. 68-73, doi: 10.1109/REEDCON57544.2023.10150562.
10. S. Bhatia, Z. A. Jaffery and **Shabana Mehfuz**, "Development and Analysis of IoT based Smart Agriculture System for Heterogenous Nodes," 2023 International Conference on Recent Advances in Electrical, Electronics & Digital Healthcare Technologies (REEDCON), New Delhi, India, 2023, pp. 62-67, doi: 10.1109/REEDCON57544.2023.10150466.
11. T. A. Sofi and **Shabana Mehfuz**, "Drowsiness and fatigue detection using multi-feature fusion," 2023 International Conference on Recent Advances in Electrical, Electronics & Digital Healthcare Technologies (REEDCON), New Delhi, India, 2023, pp. 672-675, doi: 10.1109/REEDCON57544.2023.10150459.
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2. Mehwish Waqar, **Shabana Mehfu**, “Security Challenges Faced in IOT and Proposed Solutions”, National Conference on Robotics and Mechatronics, 3<sup>rd</sup> and 4<sup>th</sup> March, Jamia Millia Islamia, New Delhi, 2020.
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5. Mohammad Ali Akhter Siddique, **Shabana Mehfu**, “Fault Diagnosis Strategies in Wireless Sensor Network: A survey”, National Conference on Emerging Trends in Electrical and Electronics Engineering, JMI New Delhi, 2-3 Feb 2015.
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7. **Shabana Mehfu**, Sumit Kumar, “Recent Trends in Anonymous Routing Protocols in Manets”, National Conference on Emerging Trends in Electrical and Electronics Engineering, JMI New Delhi, 2-3 Feb 2015.
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#### **Patents**

1. Indian Patent Application No. 380130-001, Title “Self Adjusting Webcam”, (Granted-21<sup>st</sup> September 2023)
2. South African Govt. Patent No 2022/08301, Title “Cyber Attack Prevention System for Automotive System Based on Artificial Intelligence”, (Granted – 28th Sept. 2022).
3. Australian Govt. Patent No 2021103249, Title “A Novel Multilevel Optimization for Task Scheduling and Load Balancing in Cloud”. (Granted – 8th Sept 2021).
4. Australian Govt. Patent No 2021102595, Title “A New Method of data sanitization for the privacy protection of cloud data in cloud computing”. (Granted – 9th day of March 2022).

5. Indian Patent Application No. 202141020723, Title “A System for Resource Aggregation to the Cloud with Optimal Path Detection”. (Published- 14th May 2021).
6. Indian Patent Application No. 2021111017841, Title “Integrated Solar Panel as per Sun direction using AI-based programming system”. (Published- 21st May 2021).
7. Indian Patent Application No. 2021311016697, Title “System for Control & Manage Artificial Intelligent Speaker Functionality and Operation Using Electronic Pen”. (Published- 7th May 2021).

## Research Projects

### 1. Projects Executed

- **Co-PI** for Major Research Project funded by UGC (2007-2010). Title: **Development of Intelligent Communication Network for Substation Automation**. Grant received: Rs. 3,43,000
- **Co-PI** for RPS project funded by AICTE (2007-2009). Title: **Development of Intelligent Wireless Sensor Network for Substation Automation**. Grant received: Rs. 10,59,00.
- **PI** for RPS project funded by AICTE (2012-2014). Title: **Resilience Mechanisms for Survivable Mobile Ad Hoc Network**. Grant Received: Rs. 9,50,000.

## Articles/Chapters published in Books

1. M. Weqar, **Shabana Mehfuz**, and D. Gupta. "Machine learning-based DNS traffic monitoring for securing IoT networks." Smart Cities: Power Electronics, Renewable Energy, and Internet of Things. CRC Press, 2024. Pp.236-252
2. S. Bhatia, Z. A. Jaffery and **Shabana Mehfuz**, “Integration of WSN and IoT: Wireless Network Architecture and Protocols- A way to Amart Agriculture”, in the book titled, “Machine Learning Enabled IoT for Smart Agriculture”, IGI Global, 2023, Page 21.
3. Shahnawaz Ahmad, **Shabana Mehfuz**, and Javed Beg, “Empirical Impact of AI and IoT on Performance Management: A Review”, in the book titled “Video Data Analytics for Smart City Applications: Methods and Trends”, by Bentham Science, 2023, Vol 01, pp. 99-111, ISBN: 978-981-5123-70-8.
4. M. Weqar, **Shabana Mehfuz**, and D. Gupta. "Autonomous Device Discovery for IoT: Challenges and Future Research Directions." Internet of Things: Applications for Sustainable Development (2023): 257. ISBN:9781000848090, 1000848094, Publisher: CRC Press
5. Sonam Lata, **Shabana Mehfuz**, “Efficient Ambient Energy-Harvesting Sources with Potential for IoT and Wireless Sensor Network Applications” in the book titled “Energy Harvesting: Enabling IoT Transformation” by CRC Press, Taylor & Francis Group 2022. ISBN: 978-1-003-21876-0
6. Shahnawaz Ahmad, **Shabana Mehfuz**, Javed Beg, “Empirical Analysis of Security Enabled Quantum Computing for Cloud Environment” In: Kumar, A., Gill, S.S., Abraham, A. (eds) Quantum and Blockchain for Modern Computing Systems: Vision and Advancements. Lecture Notes on Data Engineering and Communications Technologies, vol 133. Springer, 2022. ISBN: 978-3-031-04613-1 DOI: [https://doi.org/10.1007/978-3-031-04613-1\\_3](https://doi.org/10.1007/978-3-031-04613-1_3).
7. Course Writer for the course “**Emerging Technologies**” in Certificate in Computer and Information Technology, running at Center for Distance and Open Learning, JMI.
8. Course Writer for the course “**Computer Organization & Operating System**” in the Advance Diploma in Computer Hardware & Network Technology, running at Center for Distance and Open Learning, JMI.

## Books

1. Shahnawaz Ahmad, Shabana Mehfuz, Javed Beg, “Cloud Computing”, By GCS Publishers, 2022. ISBN: 978-93-94304-10-9
2. Shahnawaz Ahmad, Shabana Mehfuz, Javed Beg, “Cloud Computing: An Industrial Approach”, Lap Lambert Academic Publishing, 2022. ISBN: 978-620-49680-0

## **Research Guidance**

### **Ph.D. (Ongoing)**

1. Mitigation of Security Threats during Interoperability in IOT Networks
2. An Intelligent Approach for Goal Oriented Software Requirement Analysis.
3. Quality Assessment for Agro-products using Infrared Imaging (Co-Supervisor)
4. Development of Electronic System for Smart Grid Health Monitoring Applications (Co-Supervisor)
5. Condition Monitoring of Oil Immersed Transformer Based on Dissolved Gas Analysis. (Co-Supervisor)
6. Performance Optimization of Energy Efficient Precision Agriculture using WSN-IOT (Co-Supervisor)
7. Intelligent Stakeholders Modelling in Information System Design Processes
8. Effective Condition and Health Monitoring of Power Transformers Based on DGA (Co-Supervisor)
9. Ultra-fast charging of Electric Vehicle (Co-Supervisor)
10. Efficient on-board charging of Electric Vehicle (Co-Supervisor)
11. Intelligent Power Management of EV-to-Home System (Co-Supervisor)
12. Development of Algorithms for Health Assessment of Patients Using AI and Radiology

### **Ph.D. (Awarded/Submitted)**

1. Interference Management in Device to Device Enabled 5G Network (2024)
2. Securing Cloud Based Encryption Key Management Platform (2023)
3. Secure API Access Control Models for Cloud Computing Environment (2023)
4. Strategies for Enhancing Reliability of Wireless Sensor Networks (2021)
5. Robust Data Aggregation Techniques for Wireless Sensor Networks. (2020)
6. Reliability and availability assessment of transmission line protection functions based on IEC61850 standards (2018)
7. End-to-end security architecture and self-Resilient mechanism for Cloud Computing environment. (2017)
8. Hybrid Intelligent Algorithm for Handwritten Character Recognition (2017)
9. Resilience Mechanisms for Survivable AdHoc Networks. (2017)
10. Intelligent Decision Support System for Power System Restoration. (2017)
11. Prediction of Body Composition for Indian Population using Bioelectrical Impedance Analysis. (2015)