FIRDOUS KAUSAR

CONTACT INFORMATION

School of Applied Computational Sciences
Meharry Medical College
Nashville, TN 37208.

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Google Scholar Profile: https://scholar.google.com/citations?hl=en&user=xQ3pPlMAAAAJ
Scopus Profile: https://www2.scopus.com/authid/detail.uri?authorId=23397158300

RESEARCH INTERESTS

Federated Learning, Deep Learning, Blockchain, Digital Forensics, Biometric Cryptosystem, Machine Learning, Cyber Physical Systems Security, Access Control, Authentication and Key Management,

EXPERIENCE

Director of Quality Enhancement Planning (QEP) (July 2025 to Date), Meharry Medical College, Nashville, TN, USA

Assistant Professor (July 2025 to Date), Computer Science/Data Science Department, SACS, Meharry Medical College, Nashville, TN, USA.

Associate Professor (Jul 2023 to June 2025), Mathematics and Computer Science Department, Fisk University, Nashville, TN, USA.

Discipline Coordinator of Computer Science Department (Aug 2024 to Date), Mathematics and Computer Science Department, Fisk University, Nashville, TN, USA

Associate Professor (Sep 2017 to Jun 2023), Electrical and Computer Engineering Department, College of Engineering, Sultan Qaboos University, Muscat, Oman.

Assistant Professor (Sep 2010 to Aug 2017), Computer Science Department, College of Computer and Information Sciences (ABET-Accredited), Imam Mohammad ibn Saud Islamic University, Riyadh, Saudi Arabia.

Chair (Jan 2022- Jun 2023**)** IEEE, Women in Engineering, Oman Section.

Assistant Professor (Feb 2010 to Aug 2010), Computer Science Department, National University of Computer and Emerging Sciences, Islamabad, Pakistan.

Lecturer (Mar 2008 to Feb 2010), Information Security Department, Military College of Signals, National University of Sciences &Technology (NUST), Islamabad, Pakistan.

Principal Research Officer (Nov 2007 to Feb 2008), National Response Center for Cyber Crime (NR3C), Federal Investigation Agency, Islamabad, Pakistan.

Research Assistant (Mar 2007 to Sep 2007), Jodrey school of computer science, Acadia University, Wolfville, Nova Scotia, Canada.

Research Assistant (Mar 2006 to Dec 2006), Military College of Signals, National University of Sciences and Technology, Islamabad, Pakistan.

EDUCATION

PhD, Information Security, 2005-2009
National University of Sciences & Technology (NUST), Islamabad, Pakistan
- CGPA: 3.70/4.0
- Thesis Topic: Key Management in Wireless Sensor Networks

MSc, Information Security,2003- 2005
National University of Sciences & Technology (NUST), Islamabad, Pakistan
- CGPA: 3.63/4.0
- Thesis Topic: A Key Management Scheme based on Random Key Distribution for Clustered Wireless Sensor Networks
- Major Courses:
  Network Security, Fundamentals of Cryptography, Applied Cryptography, Cryptanalysis, Digital Signal Processing, Computer and Information Security, Information Theory and Coding, Stochastic System, Design and theory of Algorithms, and Applied Mathematics.

BS, (Hons) Computer Science,1999- 2003
Barani Institute of Information Technology, University of Arid Agriculture, Rawalpindi, Pakistan
- Silver Medal, With Honors in Computer Science, CGPA: 3.81/4.0
- Thesis Topic: Automatic Face Recognition System

CERTIFICATIONS

ABET Program Evaluator (PEV) Approved for Computer Science & Cybersecurity Degree Programs, 2025

Certified Huawei Academy Instructor
Huawei ICT Academy, October 13, 2020
Certificate Number: 02110360180805457659326

Huawei Academic Certificate
HCIA Routing & Switching, July 23, 2020
Certificate Number: 01010010180804309547352

IBM Academic Certificate
Security Intelligence Analyst Mastery Award, December 21, 2016
Unique ID: 7130-1482-3261-7948

TEACHING EXPERIENCE

Graduate Courses
- Advanced Database Management (SP 24)
- Advance Network/Web Security (Fall 2008, Fall 2009, Fall 2014, Fall 2019, FL2020)
- Data Warehouse Technologies (Spring 2014)
- Applied Cryptography (Spring 2009)
- Advanced Topics in Information Security (Spring 2008)

Undergraduate Course

- Database Management (SP24)
- Computer Security (SP24)
- Introduction to Computing (FL2023, SP24, FL24)
- Sophomore Seminar (FL2023, SP24)
- Senior Seminar-1 (SP25)
- Senior Seminar-2 (SP-25)
- Digital Forensics (SP2020)
- Network Security (SP2012, FL2012, FL2014, SP2015, FL2015, FL2016)
- Industrial Networks and Operating System (FL2017, SP 2018, FL 2018, SP2019, FL 2019, SP2020, SP2021, SP2022, SP2023)
- Database Engineering and Applications (FL2017, FL2018, FL2020, FL2021, FL 2022)
- Industrial Information System(FL2021, FL2022)
- Selected Topics in Computer Engineering(FL2021)
- Selected Topics in Electrical Engineering(FL2021)
- Programming for Engineers (SU2018, SP2018, SU2020, SU2022, FL2022)
- Applied Engineering Programming(SP2019, SP2022)
- Computer Networks (SU2010, FL2013, SP2014, FL2016)
- Database Management System (FL2013, SP2016)
- Operating Systems Security (SP2013, SP2014)
- Cryptography and Data Security (SP2010)
- Artificial Intelligence (FL2011, SP2012, FL2012, SP2013)
- Operating Systems (FL2011, FL2014, SP2015, FL2015, SP2018, SP2021, SP2023, FL2024)
- Data Encryption and Network Security (FL2009)
- Computer Programming I (SP2014)
- Computer Programming II (FL2010)
- Fundamental of Databases (FL 2010)
- Information Resource Management (SP2011)
- Information Security (SP2011)
- Linear Algebra (FL2008 and SP2009)

PUBLICATIONS   **International Journal Publications**

1. A. Adnan, F. Kausar, M. Shoaib, F. Iqbal , A. Altaf , HM. A Asif , Secure and Privacy-Preserving Approach to Healthcare Data Collaboration. *Symmetry*. 2025; 17(7):1139. https://doi.org/10.3390/sym17071139
2. F. Kausar, S. Deo, S. Hussain, Z. Ul Haque, " Federated Deep Learning Model for False Data Injection Attack Detection in Cyber Physical Power Systems". *Energies* **2024**, *17*, 5337. https://doi.org/10.3390/en17215337
3. F. Kausar, R. Al-Hamouz and S. Hussain, "Energy Demand Forecasting for Electric Vehicles Using Blockchain-Based Federated Learning," in IEEE Access, vol. 12, pp. 41287-41298, 2024, doi: 10.1109/ACCESS.2024.337766.
4. Aldaoud, M.; Al-Abri, D.; Kausar, F.; Awadalla, M. NDNOTA: NDN One-Time Authentication. Information 2024, 15, 289. https://doi.org/10.3390/info15050289
5. HM. Asif, MAK. Sadiq, F. Kausar , A. Ahmad, Empirical Analysis of Critical Thinking in Electrical Engineering and Computer Science

Courses, Journal of Engineering Education Transformations, Volume: 37, Issue: 4, Pages: 85-93, 2024 doi: 10.16920/jeet/2024/v37i4/24161 .

6. M. Aldaoud, D. Al-Abri, M. Awadalla, and F. Kausar, "Data Structure and Management Protocol to Enhance Name Resolving in Named Data Networking," Future Internet, vol. 16, no. 4, p. 118, 2024. [Online]. Available: https://doi.org/10.3390/fi16040118

7. F. Kausar, M. Mesbah, W. Iqbal, A. Ahmad, I. Sayyed, "Fall Detection in the Elderly using Different Machine Learning Algorithms with Optimal Window Size", Mobile Networks and Applications (2023). https://doi.org/10.1007/s11036-023-02215-6

8. M. Aldaoud, D. Al-Abri, M. Awadalla, F. Kausar, "Leveraging ICN and SDN for Future Internet Architecture: A Survey", Electronics 2023, 12, 1723. https://doi.org/10.3390/electronics12071723

9. M. Aldaoud, D. Al-Abri, A. Al Maashri, F.Kausar, "Detecting and mitigating DHCP attacks in OpenFlow-based SDN networks: a comprehensive approach", Journal of Computer Virology and Hacking Techniques, 2023. https://doi.org/10.1007/s11416-023-00468-z

10. F. Kausar, F. Sanan, H.M. Asif, K. Raahemifar, "6G Technology and Taxonomy of Attacks on Blockchain Technology", Alexandria Engineering Journal, Volume 61, Issue 6, June 2022, Pages 4295-4306.

11. M. Aldaoud, D. Al-Abri, M. Awadalla, F. Kausar, "N-BGP: An efficient BGP routing protocol adaptation for named data networking", International Journal of Communication Systems, 10.1002/dac.5266 , June 2022.

12. H. M. Asif, M. A. Karim, F. Kausar, "Federated Learning and Its Applications for Security and Communication", International Journal of Advanced Computer Science and Applications, Volume 13 Issue 8, 2022.

13. F. Kausar, "Iris based Cancelable Biometric Cryptosystem for Secure Healthcare Smart Card", Egyptian Informatics Journal Elsevier (SCIE), https://doi.org/10.1016/j.eij.2021.01.004 , Volume 22, Issue 4, December 2021, Pages 447-453.

14. M. Aldaoud, D. Abri, A. Maashri, F. Kausar, "DHCP attacking tools: an analysis", Journal of Computer Virology and Hacking Techniques, Springer, https://doi.org/10.1007/s11416-020-00374-80 , Volume 17, 119–129 (2021).

15. M. Awadalla, F. Kausar, R. Ahshan, "Developing an IoT Platform for the Elderly Health Care", International Journal of Advanced Computer Science and Applications, Vol. 12, No.4, 2021.

16. T. Saleem, F. Kausar, M. Mahmood "One-Minute Paper, Muddiest Point and Exit Ticket Formative Evaluation Methods used by Teachers in Daily Classroom Teaching", Journal of Critical Reviews, 2021.

17. F. Kausar, "Cancelable Face Template Protection using Transform Features for Cyberworld Security", International Journal of Advanced Computer Science and Applications (ESCI), Volume 11, Issue 1, 2020.

18. F. Kausar, S. Juma, S. Alzaydi, and R. Alroba, "Traffic Analysis Attack for Identifying Users' Online Activities", IEEE IT Professional (SCIE), 21(2):50-57, March 2019.

19. Waqas Aman and F. Kausar, "Towards a Gateway-based Context-Aware and Self-Adaptive Security Management Model for IoT-based eHealth Systems", International Journal of Advanced Computer Science and Applications(ESCI), Volume 10, Issue 1, 2019.

20. A. Alamr, F. Kausar, J. Kim, and C. Seo, "A Secure ECC based RFID Mutual Authentication Protocol for Internet of Things", The Journal of

Supercomputing, Springer (SCIE), Volume t 74, 4281–4294 (2018). https://doi.org/10.1007/s11227-016-1861-1

21. F. Kausar, A. M. AlAbdulhadi, A. N. AlYahya, S. A. AlSarami, "Biometric Keystroke Authentication: A Survey", Journal of Platform Technology, Volume 3, No 4, December 2015.

22. F. Kausar and S. O. Albeladi, "A Comparative Analysis of Privacy Preserving Techniques in Online Social Networks", Transactions on Networks and Communications, Volume 3, No 2, April, 2015.

23. F. Kausar, "New Research Directions in the area of Smart Phone Forensic Analysis", International Journal of Computer Networks & Communications (IJCNC), Vol.6, No.4, July 2014.

24. M. Yasin, F. Kausar, E. Aleisa , and J. Kim, "Correlating Messages from Multiple IM Networks to Identify Digital Forensic Artifacts", Electronic Commerce Research, Springer (SCIE), Volume 14, Issue 3, pp 369-387, 2014.

25. F. Kausar, B. Al-Otaibi, A. Al-Qadi, and N. Al-Dossari "Hybrid Client Side Phishing Websites Detection Approach", International Journal of Advanced Computer Science and Applications (ESCI), Vol.5, No.7, 2014.

26. M. Yasin, J.A. Qureshi, F. Kausar, J. Kim, and J. Seo, "A Granular Approach for User-Centric Network Analysis to Identify Digital Evidence", Peer-to-Peer Networking and Applications, Springer (SCIE), Volume 8, Issue 5, pp 911–924, Sep 2015.

27. M. Mundher, D. Muhamad, A. Rehman, T. Saba, and F. Kausar, "Digital Watermarking for Images Security using Discrete Slantlet Transform", Applied Mathematics & Information Sciences, (SCIE), Vol 8, Issue 6, 2014.

28. S. Hussain, F. Kausar, L.T Yang, F. A. Khan, J. H. Park, " Advances in communication networks for pervasive and ubiquitous applications.", Journal of Supercomputing, 64, 251–255 (2013). https://doi.org/10.1007/s11227-013-0927-6

29. A. Ali, S. Irum, F. Kausar, and F. A. Khan, "A Cluster-Based Key Agreement Scheme using Keyed Hashing for Body Area Networks", Multimedia Tools and Applications (SCIE), Vol. 66, No. 2, 2013.

30. F. Kausar, E. Aleisa, and I. Bakhsh, "Intelligent Home Monitoring Using RSSI in Wireless Sensor Networks", International Journal of Computer Networks & Communications (IJCNC), Vol.4, No.6, November 2012.

31. M. Yaseen, A. R. Cheema, F. Kausar, "Analysis of Internet Download Manager for collection of digital forensic artefacts," Journal of Digital Investigation - Elsevier (SCIE), Volume 7, Issues 1-2, Pages 90-94, October 2010.

32. S. Hussain, F. Kausar, J. H. Park, and A. Masood, "An efficient collusion resistant security mechanism for heterogeneous sensor networks", Internet Research - Emerald (SCIE), issn. 1066-2243, vol. 19, issue 2, pp. 227-245, 2009.

33. F. Kausar, S. Hussain, L. T. Yang, and A. Masood, "Scalable and Efficient Key Management for Heterogeneous Sensor Networks", The Journal of Supercomputing (JS-08) - Springer (SCIE), vol. 45, no. 1, pp. 44-65, Feb 2008.

Book Chapter
34. F. Kausar, M.A.K. Sadiq, H.M. Asif (2021) Convergence of Blockchain in IoT Applications for Heterogeneous Networks. In: Al-Turjman F.

(eds) Real-Time Intelligence for Heterogeneous Networks. Springer, Cham. https://doi.org/10.1007/978-3-030-75614-7_5

35. F. Kausar, A. Masood, and S. Hussain, An Authenticated Key Management Scheme for Hierarchical Wireless Sensor Networks in: Recent Advances in Communication Systems and Electrical Engineering (CSEE), Springer, Book Chapter, pp 85-98,2008.

International Conference Publications

36. L. Lefton, R. Kexin, F. Kausar, L. Ghemeri, C.D. Dhankara, "A Socratic RAG Approach to Connect Natural Language Queries on Research Topics with Knowledge Organization Systems", accepted in AAAI 2025 Workshop on A Translational Institute for Knowledge Axiomatization, TIKA-2025, March 3, 2025, Philadelphia, PA.

37. S. Pudel, F. Kausar, D. Das, P. Chatterjee, U. Ghosh, S. Hussain, "A Blockchain-Based Secure and Transparent Global Radioactive Source Lifecycle Management System", accepted in IEEE SoutheastCon 2025, March 27-30, 2025, Concord, NC.

38. M. A. Karim Sadiq, N. M. Al-Fannah, T. Shanmugam and F. Kausar, "Availability and Demand of Jobs from the Perception of Automated Recruitment in Oman," 2023 7th International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT), Ankara, Turkiye, 2023, pp. 1-4, doi: 10.1109/ISMSIT58785.2023.10304894.

39. M.A. Sadiq, S. Thirumurugan, N. Alfannah, F.Kausar, "Skills Extraction from Entities in Arabic CVs", The Fifth IEEE International Conference on Cognitive Machine Intelligence (IEEE CogMI 2023), Nov 1-3, 2023. Atlanta, GA, USA

40. F. Kauar, M. Awadalla, M. Mesbah, T. Albadi, " Automated Machine Learning based Elderly Fall Detection Classification" 17th International Conference on Future Networks and Communications (FNC-2022), August 9-11, 2022, Niagra Falls, Canada.

41. M. Aldaoud, D. Al-Abri, M. Awadalla, F. Kausar, "Towards a Scalable Named Data Border Gateway Protocol", 2nd International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME 2022), 16-18 November 2022, Maldives.

42. S. Sheikh, H. Asif, K. Raahemifar, F. Kausar, J. J. P. C. Rodrigues, S. Mumtaz, "RSSI Based Implementation of Indoor Positioning Visible Light Communication System in NS-3", IEEE International Conference on Communications, June 14-23, 2021, Montreal, Canada.

43. A. Ahmed, F. Kausar, M. Hussein, "Food Conservation Management System", 2nd International Hazar Scientific Researches Conference At: Khazar University, Baku, AZERBAIJAN Volume: Abstract Book: p.267 , 2021.

44. F. Kausar, W. Aman, and D. Alabri, "Mutually Authenticated Group Key Management Protocol for Healthcare IoT Networks", Future Technology Conference 2019, October 24-25, 2019, San Francisco, USA.

45. F. Kausar, M. Hussain, "Healthcare Data Protection using a Cancelable Biometric Blockchain", First International Conference on Research and Innovation in support of Economic and Digital Transformation in Oman: Achieving Vision 2040.

46. A. Alsaidi and F. Kausar, "Security Attacks and Countermeasures on Cloud Assisted IoT Applications", 3rd IEEE International Conference on Smart Cloud (SmartCloud 2018) September 21st-23rd, 2018, New York, USA.

47. T.N. Alyahya and F. Kausar, "Snapchat Analysis to discover Digital Forensic Artifacts on Android Smartphone", The 8th International Conference on Ambient Systems, Networks and Technologies (ANT 2017) May 16-19, 2017, Madeira, Portugal.

48. A. Alamr, F. Kausar, and J. Kim, "Secure Mutual Authentication Protocol for RFID based on Elliptic Curve Cryptography", 2016 International Conference on Platform Technology and Service, Jeju, Korea, 15-17 February 2016

49. S. O. Albeladi and F. Kausar, "Key Management for Secure Multicast Communication in Sensor Cloud", The 2015 International Conference on Security & Management (SAM'15), Las Vegas, USA, 25-30 July 2015.

50. F. Kausar, M. AlAskar, N. AlOtaibi, A. AlSabti, and M. AlGhafis, "Remote Disabled Monitoring System using Wireless Sensor Networks", ICTHP-2013, Riyadh, Saudi Arabia, February 2013.

51. F. Kausar, Z. Bilal, S. Z. Erdogan, and J. Kim, "AGVUS Mutual Authentication Protocol for Low- cost RFID Tags", International Symposium on Advances in Cryptography, Security and Application for Future Computing ASCA'10, Gwanglu, Korea, December 2010.

52. F. Kausar, M. Q. Saeed, and A. Massod, "Key Management and Secure Routing in Heterogeneous Sensor Networks", 4th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (SecPri WiMob 2008), Avignon, France, October 12-14, 2008.

53. F. Kausar, S. Hussain, J. H. Park, and A. Masood, "A Key Distribution Scheme Preventing Collusion Attacks in Ubiquitous Heterogeneous Sensor Networks", SecUbiq-07, Springer- LNCS, Taiwan, December 17-20, 2007.

54. F. Kausar, S. Hussain, T. Kim, and A. Masood, "Attack Resilient Key Distribution Scheme for Distributed Sensor Networks" TRUST-07, Springer- LNCS, Taiwan, December 17-20, 2007.

55. F. Kausar, S. Hussain, J. H. Park, and A. Masood, "Secure Group Communication with Self- Healing and Rekeying in Wireless Sensor Networks", 3rd International Conference on Mobile Ad Hoc and Sensor Networks (MSN 07), Springer-LNCS, Beijing, China, December 12-14, 2007.

56. S. Hussain, F. Kausar, and A. Masood, "An Efficient Key Distribution Scheme for Heterogeneous Sensor Networks", in: Proceedings of the ACM International Wireless Communications and Mobile Computing Conference (IWCMC 07), Turtle Bay Resort, Honolulu, Hawaii, August 12-16, 2007.

57. F. Kausar and A. Masood, "An Analysis of Public Key Cryptography based Techniques in Wireless Sensor Networks", in: Proceedings of the IAENG International Multi-Conference of Engineers and Computer Scientists, Hong Kong, March 21-23, 2007.

58. F. Kausar and A. Masood, "A Key Management Scheme based on Random Key Distribution for Clustered Wireless Sensor Networks", in: Proceedings of the IAENG International Multi- Conference of Engineers and Computer Scientists, Hong Kong, March 21-23, 2007.

59. F. Kausar and A. Masood, "A Random Key Distribution Scheme for Securing Wireless Sensor Networks", in: Proceedings of the 10th IEEE International Multitopic Conference, Islamabad, Pakistan, December 23-24, 2006.

60. Mehreen Afzal, F. Kausar, and Ashraf Masood, "Comparative Analysis of the Structure of eSTREAM submitted Stream Ciphers", in: Proceedings of the Second IEEE International Conference on Emerging Technologies, Peshawar, Pakistan, November 13-14, 2006.

61. R. Tahir, Muhammad Younas Javed, Muhammad Tahir, and Firdous, "LRSA: Lightweight Rabbit based Security Architecture for Wireless Sensor Networks", IITA Second International Symposium on Intelligent Information Technology Application, Shanghai, China, December 20-22, 2008.

62. F. Kausar, A. Naureen, "A Comparative Analysis of HC-128 and Rabbit Encryption Schemes for Pervasive Computing in WSN Environment", 3rd Inter- national Conference on Information Assurance and Security (ISA-09), IAWSN-09, Springer-LNCS, Seoul, Korea, June 25-27, 2009.

63. U. Ahmed, A. Wahla, and F. Kausar, "Fault Tolerant Secure Routing in Cluster based Mobile Sensor Networks", 3rd International Conference on Information Assurance and Security (ISA- 09), IAWSN-09, Springer-LNCS, Seoul, Korea, June 25-27, 2009.

64. S. Ahmad, A. Wahla, and F. Kausar, "Authenticated Encryption in WSN using eSTREAM Ciphers", 3rd International Conference on Information Assurance and Security (ISA-09), IAWSN-09, Springer-LNCS, Seoul, Korea, June 25-27, 2009.

65. Z. Bilal, A. Masood, and F. Kausar, "Security Analysis of Ultra-lightweight Cryptographic Protocol for Low-cost RFID Tags: Gossamer Protocol", The 12th International Conference on Network- Based Information Systems (NBiS 2009), Indianapolis, IN, USA, Aug 19-21, 2009.

66. A. Abid, M. Ahmad, and F. Kausar, "Secure Routing and Broadcast Authentication in Heterogeneous Sensor Networks", The 12th International Conference on Network-Based Information Systems (NBiS 2009), Indianapolis, IN, USA, Aug 19-21, 2009.

67. M. Yasin, A. Wahla, and F. Kausar, "Analysis of Download Accelerator Plus (DAP) for Forensic Artefacts", The 5th International Conference on IT Security Incident Management and IT Forensics (IMF 2009), Stuttgart, Germany, September 15 - 17, 2009.

68. M. Yasin, A. Wahla, and F. Kausar, "Analysis of Free Download Man- ager (FDM) for Forensic Artefacts", International Conference on Digital Forensics & Cyber Crime (ICDF2C 2009), Albany, NY, USA, September 30 to October 2, 2009.

69. M. Junaid, M. Ahmed, M. Arif Whala, F. Kausar, and A.Noreen, "Evaluation of Framework for the Comparative Analysis of Asymmetric Block Ciphers", The 2nd International Conference on Computer and Electrical Engineering (ICCEE 2009) Dubai, UAE, December 28 - 30, 2009.

70. M. Q. Saeed, A. Massod, and F. Kausar, "Securing ePassport system: a proposed anti-cloning and anti-skimming protocol", The 17th International conference on Software, Telecommunications and Computer Networks (Soft- COM'09), Hvar, Croatia, September 24 26, 2009.

71. M. A. Khan, F. Kausar, and A.Wahla, "Modified Anonymous Authentication Scheme with Enhanced Security for Wireless

Communication", 4th International Conference on Information Assurance and Security (ISA-10),Japan, June 23 - 25, 2010.

72. W. Iqbal, F. Kausar, and A. Wahla, "Attacks on Bluetooth Security Architecture and its Countermeasures", 4th International Conference on Information Assurance and Security (ISA- 10), Japan, June 23 - 25, 2010.

73. F. Ahmed, A. Masood, and F. Kausar, "An Efficient Multi-recipient Signcryption Scheme offering Non repudiation", The 10th IEEE International Conference on Computer and Information Technology (CIT-10), Bradford, UK, June 29 – 1, 2010.

RESEARCH GRANTS	Project Title: Proto-OKN Theme 1 CollabNext: A Person-Focused Metafabric for Open Knowledge Networks. Georgia Tech, Fisk University, Morehouse College, Texas Southern University, SUNY at Buffalo Role: Senior Personnel Funding Agency: National Science Foundation (NSF) Project Title: FY25 MS-CC IT-ART Internship Program Role: Mentor Funding Agency: National Science Foundation (NSF) Project Title: DOE-MSIPP Environmental Management Alliance Role: Senior Personnel Funding Agency: Department of Energy Project Title: A Smart & Secure Ambience for Activity Monitoring of Elderly and Physically Challenged People. Role: Principal Investigator Funding Agency: Sultan Qaboos University, Internal Grant Project Title: Clinical Cloud System for Healthcare in Oman Role: Co-Investigator Funding Agency: Sultan Qaboos University, Internal Grant Project Title: Secure Cloud-Assisted Healthcare Internet of Things Role: Principal Investigator Funding Agency: Internal and Joint Research Grant, Deanship of Research Department, Sultan Qaboos University, Muscat, Oman. Project Title: QoS Framework model for Cloud Computing Role: Assistant Principal Investigator Funding Agency: Internal and Joint Research Grant, Deanship of Research Department, Sultan Qaboos University, Muscat, Oman.
CONFERENCES AND WORKSHOPS ATTENDED	• PUI Research Nexus Workshop, Jan 24, 2025, Greenville, South Carolina. • NSF CISE MSI Aspiring PI Workshop | UNT | Dec 12-13, 2024, Denton Convention Center, Texas. • 2024 Annual National HBCU Week Conference, "Raising the Bar: Where Excellence and Opportunity Meet," September 15-19, 2024, in Philadelphia, Pennsylvania.

- Department of Energy's DOE Cybersecurity and Technology Innovation Conference, Dallas, Texas, July 29-Aug 1, 2024
- 3rd Annual Department of Energy (DOE) EM-MSIPP Achievement Workshop, Augusta, Georgia, 2024.
- HHMI Inclusive Excellence 3 Gathering, Washington DC, June 21-24, 2024.
- 2nd Annual Department of Energy (DOE) EM-MSIPP Achievement Workshop, Augusta, Georgia, 2023.
- FTC 2024 - Future Technologies Conference 2019, October 24-25, 2019, San Francisco, California, 2019.

PH.D. THESIS SUPERVISED

- Extending and Evaluating BGP for NDN Networks

MASTER THESIS SUPERVISED

- An evaluation framework for the assessment of adaptive privacy mechanisms for IoT in e-health
- Key Management for Secure Multicast in Sensor Cloud
- A Secure ECC based RFID Mutual Authentication Protocol
- Forensic Analysis of Online Social Networking Applications
- Detection and Mitigation of DHCP Attacks in OpenFlow-based SDN Networks

UNDERGRADUATE FINAL YEAR PROJECT SUPERVISED

- Blockchain based Renewable Energy Trading System
- RFID based Crowd Management IoT System
- Design of a Secure Cloud based Electronic Health Record System
- Design of Underwater Visible Light Communication System for the detection of Water Pollution
- Cancelable Iris Recognition System
- Keystroke Dynamic Authentication
- Bitcoin based Encrypted Peer-to-Peer Payment System
- Predicting Search Queries by Attacking Search Boxes Using Side-Channel Attacks
- Anti-phishing Firefox Add-on
- Android Forensic Toolkit
- Smartphone Privacy Protection Application
- Information Hiding using Combination of Stenography and Cryptography
- Remote Home Security Monitoring Using Wireless Sensor Networks
- An Automatic Face Detection and Recognition System
- Secure E-Voting System
- System design for residential power and water consumption monitoring
- Design of a Smart Real-Time Shipment Tracking and Monitoring System
- FreshAlert: Food Freshness and Quality Monitoring in Smart Packaging
- Smart Mirror powered by Face Recognition

LEARNING MANAGEMENT SYSTEMN

- Moodle
- Blackboard
- Canvas
- Edstem

PARTICIPATION IN ACADEMIC ACCREDITATION	**Program**: Bachelor of Engineering in Computer Engineering **Role**: Peer Reviewer **Institution**: College of Engineering, National University of Science and Technology, Oman. **Name of Accreditation Body**: Ministry of Higher Education, Department of Programs Supervision, at the Directorate General for Private Universities and Colleges, Oman. **Period**: Jul/2018 to Jan/2019

Program: Bachelor of Electrical and Computer Engineering
Role: Member of the Quality Assurance and Academic Accreditation Committee
Institution: College of Engineering, Sultan Qaboos University, Oman.
Name of Accreditation Body: ABET Accreditation
Period: Sep/2018- to June/2023

Program: Bachelor of Computer Science
Role: Member of the ABET Accreditation Committee
Institution: College of Computer and Information Sciences, Imam Mohammad ibn Saud Islamic University, Riyadh, Saudi Arabia.
Name of Accreditation Body: ABET Accreditation
Period: Sep/2012- Aug/2017

PERSONAL AND PROFESSIONAL DEVELOPMENT IN UNIVERSITY TEACHING & LEARNING

Completed the course "Outcome Based Learning Objectives" as part of the Certificate in Higher Education Teaching and Learning (CHETL) October 3- November 17, 2022, through Sultan Qaboos University (SQU) CETL.

Completed the course "Introduction to CHETL and Educational Philosophy" as part of the Certificate in Higher Education Teaching and Learning (CHETL) October 3- November 17, 2022, through Sultan Qaboos University CETL.

Completed the course "Teaching Critical Thinking" as part of the Certificate in Higher Education Teaching and Learning (CHETL) October 3- November 17, 2022, through Sultan Qaboos University CETL.

Attended an online workshop, "Active learning: the key to student learning," organized by Sultan Qaboos University CETL on September 23, 2021.

Attended an online workshop, "Principles from Cognitive Science for Teaching Online," organized by Sultan Qaboos University CETL on January 27, 2021.

Attended an online workshop, "Aligning Course Objectives with Online Teaching Strategies" organized by Sultan Qaboos University CETL on February 10, 2021.

Attended an online workshop, "Developing your Teaching Philosophy," organized by Sultan Qaboos University CETL on March 11, 2021

Attended an online training Workshop, "Moodle Training - Question Bank & Quizzes," organized by Sultan Qaboos University CETL on July 2, 2020.

Attended an online training Workshop, "Turnitin Assignment Workshop," organized by Sultan Qaboos University CETL on June 24, 2020.

PROFESSIONAL SERVICES

Curriculum development
- Selected by Sultanate of Oman, Ministry of Higher Education (Department of Programs Supervision) to participate in the review process of an academic program for licensing a program named Bachelor of Engineering in Computer Engineering, College of Engineering, National University of Science and Technology, Oman. Reviewed and submitted a comprehensive and analytic report of the above said academic program to the Ministry of Higher Education, Department of Programs Supervision, at the Directorate General for Private Universities and Colleges, Oman.

Book Editor
- Artificial Intelligence in Gastric Cancer: Innovations in Diagnosis and Treatment, Springer Nature Switzerland AG, 2025.

Review Editor
- Non-Conventional Communications and Networks on the editorial board of Frontiers in Communications and Networks

Board Member
- International Academic Advisory Body of the Institute of Electrical, Electronics, and Computer Engineering (IEECE), University of the Punjab, Pakistan.

Guest Editor
- Special Issue on Exploring Symmetry in Wireless Communication, Symmetry (ISSN 2073-8994), 2025.
- Special Issue on Advances in Communication Networks for Pervasive and Ubiquitous Applications, Journal of Supercomputing, Springer, 2011.

Program Chair
- International Workshop on Information Assurance in Wireless Sensor Networks (IAWSN- 09), 3rd International Conference on Information Security and Assurance (ISA-09) Seoul, Korea, 25-27 June 2009.
- International Workshop on Information Assurance and Security (WIAS-11) in conjunction with the 2nd International Conference on Ambient Systems, Networks and Technologies (ANT-2011), Niagara Falls, Ontario, Canada, September19-21, 2011.

Technical Chair
- IEEE International Conference on Emerging Technologies 2010 (ICET 2010), Islamabad, Pakistan, October 18-19, 2010.

Publicity Chair
- International Workshop on Trust Management in Ubiquitous and Pervasive Systems (TMUPS-09).
- The Fourth International Symposium on Smart Home (SH09), 13-16th July 2009 in Radisson Hotel Admiral Toronto Harbour Front, Toronto, Canada.

Program Committee Member
- IEEE Communication Magazine

- The 7th International Conference on Ambient Systems, Networks and Technologies (ANT 2016)
- The 6th International Conference on Ambient Systems, Networks and Technologies (ANT 2015)
- The 5th International Conference on Ambient Systems, Networks and Technologies (ANT 2014)
- International Conference on Mobile Communications and Pervasive Computing (MCPC 2009)
- International Workshop on Advances in Cryptography, Security and Applications for Future Computing (ACSA-09) 2009.
- 5th International Symposium on Smart Home (SH 2010), Future Tech 2010,
- Wireless Communications and Mobile Computing Journal (John Wiley and Sons), 2009.
- International Workshop on Advances in Cryptography, Security and Applications for Future Computing (ACSA-09), 2009.
- Security and Communication Networks Journal ((John Wiley and Sons), 2009.

Administrative Committee Member
- Quality Assurance and Development Committee for Computer Science Department
  - Revision of course reports and possible modification of the course content or textbooks
  - Work as a member to fulfill ABET accreditation requirements
  - Proposal of new courses following the scientific evolution and the international guidelines for computer science programs
- Graduation Projects (GP) Committee
  - Organize the process from collecting project proposals, assigning them to students' groups, following the evolution of students' achievements using work progress reports, assembling finalized projects, prepare the schedules for projects defense, and submission of final grades.

AWARDS
- IEEE Oman Best Student Paper Award for a paper titled, "N-BGP: An efficient BGP routing protocol adaptation for named data networking", International Journal of Communication Systems, 2022.
- Excellence in Research Award at Imam Muhammad bin Saud Islamic University, Riyadh, Saudi Arabia, 2016.
- Best Poster Presentation Award for the final year graduation project titled, "Remote Home Security Monitoring using Wireless Sensor Networks," in The Fourth Annual Conference on Undergraduate Research on Applied Computing (URC 2012), April 18-19, 2012, Zayed University, UAE.
- Higher Education Commission of Pakistan, International Research Support Initiative Program Scholarship, 2007.
- Higher Education Commission of Pakistan, Indigenous Ph.D. Fellowship, 2004–2007.

PROFESSIONAL SOCIETY MEMBERSHIP
- ACM(Association for Computing Machinery)
- Global Ambassador of WOMENTECH Network

LANGUAGE PROFICIENCY

- English, Advance level
- Urdu, Advance level
- Arabic, Intermediate level
- Punjabi, Advance level

PERSONAL INFORMATION

Date of Birth	June 3, 1979
Nationality	Pakistani
Gender	Female
Marital Status	Married