Mir Nazish

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Career Objective

To join a value-driven organization that offers continuous learning opportunities, where I can enhance my knowledge, apply my skills effectively, and contribute to achieving organizational excellence.

Skills

• Software	Cadence, MATLAB, NI Multisim, HSPICE, Xilinx, Altera, Proteus, GNU Sim, emu 8086, ARM KEIL MDK, Simplicity Studio, CodeComposer Studio, Arduino, Microsoft Office, LaTeX, Mendeley, EdgeImpulse, Arduino IDE, Cooja Simulator
• Programming Language	C, C++, VHDL, MATLAB, Python
• Processors	8085, 8086, 8051, PIC, and ARM Cortex-M
• Graphics Software	Solid Works
• Operating System	Windows 7, Windows 10, Ubuntu, Contiki

Education

March 2026	**Ph.D.** ***(Embedded Systems)*** *University of Kashmir*
March 2019	**M.Tech. Embedded Systems** *University of Kashmir* **Dissertation**: Implementation of CoAP and MQTT Application Layer Protocols for the Internet of Things
June 2016	**B.Tech. Electronics and Communication** *University of Kashmir* **Project:** Digital Capacitor Leakage Meter Using PIC 16F88 Microcontroller

Competitive Examinations

- UGC National Eligibility Test (NET) (Electronic Sciences), December 2019.
- UGC Junior Research Fellowship (JRF) (Electronic Sciences), December 2019.

Professional Training

- One-month BSNL Certified Advanced Vocational Training at Jabalpur, Madhya Pradesh, 2015.

Workshops/Conferences Attended

- Short Term Programme on Cyber Security (Interdisciplinary) from 22nd to 29th December, 2025, organized by UGC–Malaviya Mission Teacher Training Centre (MMTTC), University of Kashmir, Srinagar.
- One Day Agri-Tech Excellence & Innovation Workshop, held on 31st December 2025, organized by the Department of Botany, University of Kashmir, focusing on innovation and sustainable agricultural technologies.
- Two-Day Awareness Program on Cyber Security in the Age of Artificial Intelligence, organized by Centre for Innovation, Incubation and Entrepreneurship Institute of Technology, University of Kashmir, held on 30th-31st October, 2025.
- AMD-Xilinx Technical Webinar on "Advanced Hardware Debugging using AMD Tool", held on 20th Aug 2025, in association with CoreEL Technologies Pvt Ltd. and AMD-Xilinx.
- AMD-Xilinx Technical Webinar on Hardware Acceleration using AMD Tools, 24th July 2025, in association with CoreEL Technologies Pvt Ltd. and AMD-Xilinx.
- AMD-Xilinx Technical Webinar on DFX flow using Vivado on AMD FPGAs & Adaptive SoCs, 21st July 2025, in association with CoreEL Technologies Pvt Ltd. and AMD-Xilinx.
- 2nd International Conference on Evolution in Pure & Applied Mathematics (ICEPAM-2024), organized by the Department of Mathematics, Akal University, Talwandi Sabo, Bathinda, Punjab (India), during November 20-22, 2024.
- Competency Course on the Internet of Things organized by the University of Kashmir for the Visiting Students of University Malaysia Pahang Al-Sultan Abdullah (UMPSA), Malaysia, 7th October 2024.
- Two-Day National Seminar (20th-21st June 2024) on Technical Terminology in the Kashmiri language with Importance in Engineering & Technology, organized by Department of Electronics and Instrumentation Technology, University of Kashmir & Commission for Scientific and Technical Terminology (CSTT), Ministry of Education, Govt. of India.
- Pre-conference workshop on "Data Driven Decision Making" in the 3rd International Conference of UG Students held on March 01, 2024, organized by Soft Computing Research Society.
- 7th International Conference on Innovative Computing and Communication (ICICC-2024), organized by Shaheed Sukhdev College of Business Studies, University of Delhi, New Delhi, India, in association with the National Institute of Technology Patna, India, and the University of Valladolid, Spain, on 16th -17th February, 2024.
- Two-Day Workshop on “Digital Tools for Quality Research: Hands-On Workshop for Research Scholars”, Organized by Directorate of Internal Quality and Assurance, University of Kashmir, 26th-27th December, 2024.

- Workshop on "Creating & Deploying AI Condition-Based Monitoring Solutions with Qeexo and Arm," organized by BrightTalk, on November 16, 2023.
- Workshop on "Application Security for a Hybrid and Multi-Cloud Digital World," organized by BrightTalk, on November 16, 2023.
- Participated in the One Slide Presentation of Student Research Symposium 2023 (SRS'23), October 10-11, 2023, Co-Organized by IEEE Madhya Pradesh Section Electron Devices Society Chapter, IEEE Nanotechnology Council Student Chapter, Indian Institute of Technology Indore, IEEE Sensors Council Student Chapter, Indian Institute of Technology Indore.
- VLSI to System Design: Silicon to End Application Approach, Organized by the All India Council for Technical Education (AICTE), ARM Education, and STMicroelectronics from July 31st to August 4th, 2023.
- EndNote Training & Certification Program July 2023, organized by Clarivate.
- IP Awareness/Training program under National Intellectual Property Awareness Mission, organized by the Intellectual Property Office, India, June 26, 2023.
- How to effectively use ScienceDirect- Read Quality-Publish Quality, Researcher Academy On Campus, Elsevier, University of Kashmir, 9th November 2021.
- Workshop on Sixth Sense Technology conducted by Technophilia Systems in Association with Robotics and Computer Applications Institute (USA), 2014.
- Workshop on Techno-entrepreneurship held at NIT, Srinagar, 2012.

Seminars Attended

- 13th Session of Jammu and Kashmir Science Congress, 2nd-4th April 2018.
- UGC Sponsored National Seminar on Electronic Devices, Systems and Information Security (SEEDS-2017).
- UGC Sponsored National Seminar on Electronic Devices, Systems and Information Security (SEEDS-2016).
- International Conference on Advances in Computers, Communication, and Electronic Engineering (COMMUNE-2015) University of Kashmir, Srinagar, 16th- 18th March 2015.
- National Seminar on Electronic Devices, Systems and Information Systems (SEEDS-2015) University of Kashmir, Srinagar, 16th-17th March 2015.

Research Publications (Full Length)

Journal Papers Published/Accepted/Under Revision/Under Review

- **Mir Nazish**; M. Tariq Banday; Insha Syed; Sheena Banday **(2023), "An Efficient Permutation Approach for SbPN-based Symmetric Block Cyphers"**, *Cybersecurity, DOI: 10.1186/s42400-023-00174-9.*
- **M. Nazish** and M. T. Banday **(2024)**, "**A Novel Fibonacci-Sequence-Based Chaotification Model for Enhancing Chaos in One-Dimensional Maps**," IEEE Internet Things J., vol. 11, no. 24, pp. 40268–40277, Dec. 2024, doi: 10.1109/JIOT.2024.3450547.
- **M. Nazish,** M. Javid, and M. T. Banday **(2025)**, **"Enhanced logistic map with infinite chaos and its applicability in lightweight and high-speed pseudo-random bit generation,"** Cybersecurity, vol. 8, no. 1, p. 24, Apr. 2025, doi: 10.1186/s42400-024-00319-4.
- S. F. Allaqband, M. Nazish, S. F. Allaqband, J. Bashir, and M. T. Banday **(2024)**, "**An efficient machine learning based CPU scheduler for heterogeneous multicore processors**," *Int. J. Inf. Technol.*, May 2024, doi: 10.1007/s41870-024-01936-5.
- **Nazish, M.,** Banday, M.T. **(2025)**, **e-CM: A novel approach to advancing chaotic dynamics in discrete one-dimensional maps for secure IoT applications.** Cybersecurity 8, 71 (2025)**.** https://doi.org/10.1186/s42400-024-00347-0.
- **Nazish, M.,** Banday, M.T. **(2025) "Adaptive image encryption for securing IoT applications using FCM-based chaotic maps".** Iran J Comput Sci (2025). https://doi.org/10.1007/s42044-025-00303-2.
- **Nazish, M.,** Javid, M. & Banday, M.T. **(2026) Securing IoT applications with enhanced logistic map-based adaptive lightweight image compression and encryption.** Int J Adv Eng Sci Appl Math (2026). https://doi.org/10.1007/s12572-026-00424-2.
- **Nazish, M.,** Banday, M.T **(2025)**. **"Resource-Efficient One-Dimensional Discrete Chaotic Map-Based Pseudo-Random Number Generator for IoT Applications: A Practical Analysis".** SN COMPUT. SCI. 6, 779 (2025). https://doi.org/10.1007/s42979-025-04294-6.
- **Mir Nazish,** M. Tariq Banday **(2026), "Lightweight Cryptographic Symmetric Block Cyphers for Smart Internet of Things – An Experimental Study" (***Accepted in International Journal of Sensors, Wireless Communications and Control).*
- **Nazish, M.,** Farooq, M. & Banday, M.T. **(2026), Enhanced simple quadratic map for lightweight PRBG and IoT image encryption.** Iran J Comput Sci 9, 35 (2026)**.** https://doi.org/10.1007/s42044-026-00389-2.
- **Nazish, M.,** Tariq Banday **(2025)**, M**. Lightweight chaotic map-based pseudo-random bit generator design: enhancing performance for IoT systems.** Iran J Comput Sci (2025)**.** https://doi.org/10.1007/s42044-025-00333-w.

- **Nazish, M.,** Banday, M.T (**2025**). **A novel golden π-ratio scaling chaotification model for securing medical Internet of Things applications.** J. Eng. Appl. Sci. 72, 239 (2025). https://doi.org/10.1186/s44147-025-00794-7**.**
- **M. Nazish** and M. Tariq Banday (**2026)**, "**A Novel Irrational Scaling Chaotification Model for Securing Lightweight Industrial Internet of Things Applications"** *(Accepted in Cluster Computing Journal).*
- **M. Nazish** and M. Tariq Banday (**2026)**, "**High-Speed Chaotic Map-Based PRESENT Block Cipher for Lightweight Image Encryption**" *(Under Revision).*
- Sultan, I., Lone, M. Y., **Nazish, M.**, & Banday, M. T. **(2023), "A Secure Key Expansion Algorithm for PRESENT",** IEEE Sensors Journal, doi: 10.1109/JSEN.2023.3267386.
- M. Ul Islam, **M. Nazish**, I. Sultan, and M. Tariq Banday (**2026)**, "**Lightweight Authenticated Ciphers: An Experimental Real-Time Performance Evaluation of ASCON**" *(Under Review).*
- **M. Nazish** and M. Tariq Banday (**2026)**, "**Advancing Chaos in Quadratic Map with its Applicability in PRBG Design for Securing Lightweight IoT Applications**" *(Under Review).*
- **M. Nazish** and M. Tariq Banday (**2026)**, "**A Novel π-Based Chaotification Model (π-CM) for Advancing Chaos in One-Dimensional Discrete Maps"** *(Under Review).*
- **M. Nazish** and M. Tariq Banday (**2026)**, "**Highly Efficient Pseudo-Random Bit Generator Design for IoT: Integrating ARM Cortex FPU Capabilities with Low-Dimensional Chaotic Maps"** *(Under Revision).*
- **Mir Nazish,** Anjuman Farooq, Abdul Manan, Faqrun Nisa, M. Tariq Banday (**2026)**, **"Performance Optimized and Resource-Aware Machine Learning Intrusion Detection Framework for Smart Home Environments"** *(Under Revision).*
- **Mir Nazish**, M. Tariq Banday (**2026)**, **"Optimized Machine Learning Framework for Link Quality Estimation in IoT and Wireless Sensor Networks"** *(Under Revision).*
- **Mir Nazish,** Abdul Manan, M. Tariq Banday (**2026), "An Optimized Deep Learning Framework for IoT-Based Smoke Detection with Enhanced Performance and Computational Efficiency"** *(Under Revision).*
- **Mir Nazish,** Abdul Manan, M. Tariq Banday (**2026)**, **"Optimized Tiny Machine Learning-Based Smoke Detection Model for Edge Devices"** *(Under Revision).*

Conference Publications

- M. Ul Islam, **M. Nazish,** I. Sultan, and M. Tariq Banday (**2024)**, "**ASCON Lightweight Security Standard for the Internet of Things Devices—A Study**," in Lecture Notes in Networks and Systems, vol. 1024 LNNS, 2024, pp. 503–517. doi: 10.1007/978-981-97-3817-5_36.
- **M. Nazish** and M. T. Banday (**2023)**, "**Exploring Lightweight Encryption for Image Security using One-Dimensional Chaotic Maps**," in Third International Conference on Smart Technologies, Communication and Robotics (STCR), IEEE, Dec. 2023, pp. 1–6. doi: 10.1109/STCR59085.2023.10396991.
- M. Rouf, **M. Nazish**, I. Sultan, and M. T. Banday (**2022)**, **"Implementation of Area and Power Optimised ARM Cortex-M Cores on FPGA,"** Smart Technologies, Communication and Robotics (STCR), Sathyamangalam, India, 2022, pp. 1-6, doi: 10.1109/STCR55312.2022.10009282.
- N. A. Lone, **M. Nazish**, I. Sultan, and M. T. Banday (**2022)**, **"Optimised Hardware Implementation of AES for Improving Energy Efficiency of Low-Power Devices,"** Smart Technologies, Communication and Robotics (STCR), Sathyamangalam, India, 2022, pp. 1-5, doi: 10.1109/STCR55312.2022.10009468.
- Syed, **M. Nazish**, I. Sultan and M. T. Banday (**2022)**, **"Implementation Techniques for GIFT Block Cypher: A Real-Time Performance Comparison,"** Smart Technologies, Communication and Robotics (STCR), Sathyamangalam, India, 2022, pp. 1-5, doi: 10.1109/STCR55312.2022.10009581.
- M. Ali, **M. Nazish**, S. Ashaq, I. Sultan, and M. T. Banday (**2022)**, **"Design of Hybrid Glitch-Reduction Techniques for Loop Unrolled SIMON Block Cypher,"** Smart Technologies, Communication and Robotics (STCR), Sathyamangalam, India, 2022, pp. 1-6, doi: 10.1109/STCR55312.2022.10009429.
- S. Ashaq, **M. Nazish**, M. Ali, I. Sultan, and M. Tariq Banday (**2022), "FPGA Implementation of PRESENT Block Cypher with Optimised Substitution Box,"** Smart Technologies, Communication and Robotics (STCR), Sathyamangalam, India, 2022, pp. 1-6, doi: 10.1109/STCR55312.2022.10009366.
- S. Banday, **M. Nazish**, I. Sultan, and M. T. Banday (**2022)**, **"Performance Comparison of Software-Efficient Implementations of the PRESENT Block Cypher,"** Smart Technologies, Communication and Robotics (STCR), Sathyamangalam, India, 2022, pp. 1-5, doi: 10.1109/STCR55312.2022.10009097.
- Tariq, **M. Nazish**, S. Ashaq, I. Sultan, and M. T. Banday (**2022)**, **"A Performance Comparison of Hashed and Authenticated Advanced Encryption Standard,"** Smart Technologies, Communication and Robotics (STCR), Sathyamangalam, India, 2022, pp. 1-5, doi: 10.1109/STCR55312.2022.10009112.

- **Mir Nazish** and M. Tariq Banday **(2018)**, **"Green Internet of Things: A Study of Technologies, Challenges and Applications",** International Conference on Automation & Computational Engineering (ICACE-2018), Amity University, Noida, Delhi, 3-4 Oct, 2018, IEEE Publication. ISBN: 978-1-5386-5464-4, URL: https://ieeexplore.ieee.org/document/8686976, DOI: 10.1109/ICACE.2018.8686976. Pages: 210 – 215.

Abstracts

- **M. Nazish**, M. Javid, and M. T. Banday **(2024)**, **"Securing IoT Applications with Enhanced Logistic Map-Based Adaptive Lightweight Image Compression and Encryption"**, **2024** *(International Conference on Evolution in Pure and Applied Mathematics (ICEPAM-2024)).*
- **Mir Nazish**, M. Tariq Banday **(2018). "A Study of Technologies, Challenges and Applications of Green Internet of Things"**, Proceedings of the 13th Session of Jammu and Kashmir Science Congress, 2nd-4th April 2018, ISBN:978-93-5291-653-5.
- **Mir Nazish** and M. Tariq Banday **(2018). "From Cloud to Fog Computing"** National Seminar on Electronic Devices, Systems and Information Security, SEEDS-2018, 3rd-4th April, 2018, University of Kashmir.