CENTRAL UNIVERSITY OF JAMMU

FACULTY PROFILE

Name	**Dr. Zakir Ahmad Sheikh**	
Title & Designation	Assistant Professor, Department of Computer Science and Information Technology, Central University of Jammu Rahya-Suchani (Bagla), District Samba,Pincode - 181143, Jammu & Kashmir (J&K), India	
Residence Address	Turigam Devbugh, Yaripora Kulgam, Jammu and Kashmir - 192232	
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Educational Qualifications:		
Degree	**Institution**	**Year**
Ph. D.	Central University of Jammu	2026
M. Tech.	Central University of Jammu	2020
B. Tech.	Mewar University	2017

Competitive Exams:		
Exam	**Subject**	**Year**
UGC-NET	Computer Science and Applications	2022
GATE	Computer Science and Information Technology (CS)	2020

Areas of Interest / Specialization:

Cyber Security, Security of Cyber Physical Systems, Artificial Intelligence, Programming, Internet of Things, Computer Networks, Algorithms and Data Structures, Database Management System, Operating System

Career Profile:		
Designation	**Institute/Organization**	**Period**
Assistant Professor	Central University of Jammu	November 2023 onwards
Project Junior Research Fellow (JRF)	Central University of Jammu	July 2021 – May 2023
Software Developer and Trainer	Think and Win Technologies	January 2018 – July 2018
Software Developer	EMax Technologies Private Limited	July 2017 – January 2018

Subjects/Topics Taught:

Cyber Security Risk and Incident Management
Cyber Security Project Management
Robotics and AI
Internet of Things
Artificial Intelligence
Computer Programming
Data Structure
Data Communication and Computer Networks (Lab)

Introduction to Information and Network Security (Lab)

Research Guidance:

S. No.	Name	Enrolment	Course	Batch	Title	Role	Status
1	Rajan Katoch	22MCST06	M. Tech.	2022-24	Security Assessment of Modbus and DNP3 Communication Protocols on Hydro-Power Plant Based Industrial Control System (ICS) Testbed	Co-Supervisor	Completed
2	Nitin Langeh	23MCST06	M. Tech.	2023-25	Hybrid Ensemble Deep Auto Encoder-Based Intrusion Management Framework for Industrial Control Systems: HEDA-IMF	Co-Supervisor	Completed
3	Najuma Banoo	24MCST09	M. Tech.	2024-26	Development of Artificial Intelligence Based Framework for Apricot Disease Detection	Co-Supervisor	Completed
4	Varini Malhotra	24MCST15	M. Tech.	2024-26	Towards Robust Deepfake Detection: An Artificial Intelligence-Based Framework for Realistic Media Processing Conditions	Co-Supervisor	Completed

Publications Profile:

a. Research Papers in Journals

1. Sheikh, Z. A.; Singh, Y.; Singh, P. K.; & Ghafoor, K. Z. (2022). Intelligent and secure framework for critical infrastructure (CPS): Current trends, challenges, and future scope. *Computer Communications*, *193*, 302-331. https://doi.org/10.1016/j.comcom.2022.07.007 (**IF 6.0**)
2. Sheikh, Z. A.; Singh, Y.; Singh, P. K.; & Gonçalves, P. J. S. (2023). Defending the Defender: Adversarial Learning Based Defending Strategy for Learning Based Security Methods in Cyber-Physical Systems (CPS). *Sensors, MDPI*. 23(12), 1-19. https://doi.org/10.3390/s23125459 (**IF 3.9**)
3. Sheikh, Z. A.; Singh, Y.; Tanwar, S.; Sharma, R.; Turcanu, F. E.; & Raboaca, M. S. (2022). EISM-CPS: An Enhanced Intelligent Security Methodology for Cyber-Physical Systems through Hyper-Parameter Optimization. *Mathematics, MDPI*. 11, 189-205. https://www.mdpi.com/2227-7390/11/1/189 (**IF 2.592**)
4. Ahad, U.; Singh, Y.; Anand, P.; Sheikh, Z. A.; & Singh, P. K. (2022). Intrusion Detection System Model for IoT Networks Using Ensemble Learning. *Journal of Interconnection Networks*, 2145008. https://doi.org/10.1142/S0219265921450080 (**IF 0.459**)
5. Sheikh, Z. A., Verma, N., Singh, Y., Tanwar, S., & Alabdulatif, A. (2025). Generalizability Assessment of Learning-Based Intrusion Detection Systems for IoT Security: Perspectives of Data Diversity. Security and Privacy, 8(2), e70014.
6. War, M. R., Singh, Y., Sheikh, Z. A., & Singh, P. K. (2025). Review on the Use of Federated Learning Models for the Security of Cyber-Physical Systems. Scalable Computing: Practice and Experience, 26(1), 16-33.
7. Verma, N., Kumar, N., Verma, C., Illes, Z., & Sheikh, Z. A. (2025). LSFRS: A lightweight framework for efficient and secure communication in IoT-based robotic surveillance. Cluster Computing. 28, 732. https://doi.org/10.1007/s10586-025-05385-y
8. Sheikh, Z. A., Singh, Y., Tanwar, S., & Alabdulatif, A. (2025). Threat Modeling to Secure CPS-Based Critical Infrastructures. Security and Privacy, 8(6), e70111.
9. Sheikh, Z. A., & Singh, Y. (2025). OLM-CPS: Optimized Learning Models for the Security of Constrained Cyber Physical Systems. Procedia Computer Science, 259, 1845-1854.

10. Verma, N., Kumar, N., Sheikh, Z. A., Koul, N., & Ashish, A. (2025). Machine Learning for the Cybersecurity of Robotic Cyber-Physical Systems: A Review. Procedia Computer Science, 259, 1817-1826.
11. War, M. R., Singh, Y., & Sheikh, Z. A. (2025). FedSec-CPS: Federated Learning Based Security Framework for Security of Cyber-Physical Systems. Procedia Computer Science, 259, 1837-1844.

b. Research Papers in Conferences

1. Sheikh, Z. A.; & Singh, Y. (2022). A Hybrid Threat Assessment Model for Security of Cyber Physical Systems. *Seventh International Conference on Parallel, Distributed and Grid Computing (PDGC).IEEE.* 10.0.4.85/PDGC56933.2022.10053332
2. Sheikh, Z. A., & Singh, Y. (2023, October). Review of Cyber-Physical System-Based Security Datasets for Learning-Based Intrusion Detection Systems. In The International Conference on Recent Innovations in Computing (pp. 291-305). Singapore: Springer Nature Singapore.
3. Katoch, R., Singh, Y., & Sheikh, Z. A. (2023, October). A Hybrid Security Methodology for Real-Time Constraint Cyber-physical Systems. In The International Conference on Recent Innovations in Computing (pp. 217-231). Singapore: Springer Nature Singapore.
4. Sheikh, Z. A., & Singh, Y. (2021). Lightweight de-authentication DoS Attack detection methodology for 802.11 networks using sniffer. In *Proceedings of second international conference on computing, communications, and cyber-security* (pp. 67-80). Springer, Singapore. https://doi.org/10.1007/978-981-16-0733-2_5
5. Akshita, Singh, Y., & Sheikh, Z. A. (2022). On efficient and secure multi-access edge computing for internet of things. In *Proceedings of Third International Conference on Computing, Communications, and Cyber-Security* (pp. 299-310). Springer, Singapore. https://doi.org/10.1007/978-981-19-1142-2_23
6. Muzafar, R., Singh, Y., Anand, P., & Sheikh, Z. A. (2022). Review on Security of Internet of Things: Security Requirements, Threats, and Proposed Solutions. In *Emerging Technologies for Computing, Communication and Smart Cities* (pp. 747-756). Springer, Singapore. https://doi.org/10.1007/978-981-19-0284-0_54
7. Jabeen, R., Sheikh, Z. A., & Singh, Y. (2022). "Machine Learning for Security of Cyber-Physical Systems and Security of Machine Learning: Attacks, Defences, and Current Approaches", *International Conference on Recent Innovations in Computing (ICRIC) INDO-Hungry 2022*, volume 2. Springer, Singapore. https://doi.org/10.1007/978-981-99-0601-7_62

c. Book Chapters

1. Sheikh, Z. A., & Singh, Y. (2022). Minimizing Cost, Effort, and Implementation Complexity for Adopting Security Requirements in an Agile Development Process for Cyber-Physical Systems. *Agile Software Development: Trends, Challenges and Applications*. Scrivener Publishing LLC. https://doi.org/10.1002/9781119896838.ch6
2. Verma, N., Kumar, N., Sheikh, Z. A., Koul, N., & Ashish, A. (2024). Cybersecurity issues and artificial intelligence–based solutions in cyber-physical systems. In Intelligent security solutions for cyber-physical systems (pp. 108-121). Chapman and Hall/CRC.

Patent:

S. No.	Title of Patent	Patent Number / Application Number	Date of Filing	Date of Publication	Status (Filed/ Published / Granted)	Patent Type (Utility/ Design/ Provisional)	Type (National /International)	Inventors
1	Smart Robotic Arm System for Apple Grading and Categorization	439295-001	28/11/2024	21/02/2025	Published and Awarded	Design	National	Zakir Ahmad Sheikh, Dinesh Kumar, Yashwant

								Singh, Narinder Verma
2	IoT-Enabled Autonomous Snow Removal System with Aerial and Ground Units	202411090612	21/11/2024	06/12/2024	Published	Utility	National	Pradeep Kumar Singh, Zakir Ahmad Sheikh, Narinder Verma, Yashwant Singh, Sanjeev Jain, Amrit Lal Paswan

Awards and Distinctions:

1. **PMSSS for Pursuing B. Tech.** Received Prime Minister's Special Scholarship Scheme for pursuing B. Tech. degree.
2. **First Rank in B. Tech.** Secured highest marks for all the four years of B. Tech. in the department of Computer Science and Engineering (CSE), Mewar University, Rajasthan (Batch 2013-2017)
3. **Best Reviewer Award.** Honored with the best reviewer award in the 6th International Conference on Recent Innovations in Computing (ICRIC-2023) organized by Department of Computer Science and IT, Central University of Jammu.
4. **Third Position in Programming Competition.** Achieved 3rd position in University level programming competition (C for Denis) at Mewar University Rajasthan.

Resource Person:

1. One week FDP/Workshop on "Recent Trends in Security: IoT, Blockchain, and Cyber Security (RTS-2022)" held during 19th-23rd September 2022, organized by Department of Computer Science and IT, Central University of Jammu, India.

Member

1. Technical Appraisal Committee (TAC) Member for Reviewing the Request for Proposal (RFP) Documentation of "Crime and Criminal Tracking Network and Systems" (CCTNS) Project, Govt. of J&K. (Dated 29 March, 2024).
2. Technical Appraisal Committee (TAC) Member for Reviewing project "Innovative Extension Approaches for Revitalizing Agriculture in the Union Territory of Jammu and Kashmir", Govt. of J&K. (Dated 15 July, 2024).
3. Nodal Officer, Mission YUVA, (for IEC Activities, Interactive Portal Development, Skill and Imparting), Government of Jammu and Kashmir. (09 September, 2024).

Conference Session Chair:

1. Seventh International Conference on Parallel, Distributed and Grid Computing (PDGC-2022), IEEE, held during 25th-27th November 2022, organized by Department of Computer Science and Engineering, Jaypee University of Information Technology, Himachal Pradesh, India.

Reviewer:

1. Reviewed a Cyber Security related paper in September 2022 for the Journal namely "Bulletin of Electrical Engineering and Informatics (BEEI)", Institute of Advanced Engineering and Science (IAES). (Scopus Indexed)

Conferences/Workshops/FDPs:

1. Attended International Conference in Recent Innovations in Computing (ICRIC-2023) at Central University of Jammu on 26-27 October, 2023.
2. Attended International Conference in Recent Innovations in Computing (ICRIC-2022) (Indo-Hungarian Conference), Volume 2 at Central University of Jammu on 13-14 August, 2022.
3. Attended International Conference in Recent Innovations in Computing (ICRIC-2022), Volume 1 at Central University of Jammu on 16-17 May, 2022.
4. Attended International Conference in Recent Innovations in Computing (ICRIC-2019) at Central University of Jammu on 08-09 March, 2019.

5. Attended National Conference of Material Sciences (NCMS-2014) at Mewar University, Rajasthan on 17-18 October, 2014.
6. Attended Microsoft AI Classroom Series at Microsoft on 01 April, 2021.
7. Attended One Day Cyber Forensics Workshop at Indian Institute of Technology (IIT) Jammu, India on 10 February, 2023.
8. Attended 1st National Level Research Conclave at Institute of Technology, Nirma University, Ahmedabad, India on 19-20 December, 2022.
9. Attended Webinar on The Art of Drone Technologies at Bharati Vidyapeeth's Institute of Computer Applications and Management (BVICAM), New Delhi, India on 12 March, 2022.
10. Attended Recent Trends in Security: IoT, Blockchain, and Cyber Security (RTS-2022) at Central University of Jammu, India on 19-23 September, 2022.
11. Attended FDP on Artificial Intelligence at Central University of Jammu, India on 18-22 November, 2019.
12. Attended FDP on Internet of Things (IoT) at Central University of Jammu, India on 14-18 October, 2019.
13. Attended Workshop on Android Technology at Mewar University, Rajasthan, India on 11-12 December, 2013.

Internships/Trainings:

1. Completed an internship in Advanced Java at Rooman Technologies, Bangalore, from January 2017 to June 2017.
2. Engaged in Android Application Development training at KVCH-IBM Business Partner, Delhi, from June 2016 to July 2016.
3. Undertook Project Training in Java at Aptech, Srinagar, from June 2015 to July 2015.

Research Projects:

S. No.	Title of Project	Sponsoring Agency	Duration	Sanctioned Amount	Status
1.	IoT-Driven Precision Agriculture for Sustainable Tomato Cultivation in Jammu & Kashmir	JK Science Technology & Innovation Council, Department of Science & Technology, Govt. of J&K	2 Years	Rs. 9.00 Lacs	Ongoing

06 November, 2026 **Dr. Zakir Ahmad Sheikh**