

Prof. (Dr.) Yashwant Singh, Ph.D.



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Key Strengths

- 1. Research and Development:** Proven research record with students (UG/PG/PhD) & faculty colleagues and inculcate the research culture among students (UG/PG/PhD) & faculty members at my serving universities/Institutes.
- 2. Academic Development:** Rich experience in curriculum developments with Outcome-Based Education (OBE), Choice Based Credit System(CBCS)framework and NEP-2020.
- 3. Academic Leadership:** Long experience in administering academic departments and the overall administration of multidisciplinary academics.
- 4. Diversity in profile:** Worked in an affiliated Institutes, private university / institute with the CBCS framework, and state govt. university systems also.

Educational Qualifications

Degree	Institutions
Ph.D.	Himachal Pradesh University Shimla
Master of Engineering (M.E.)	Punjab Engineering College Chandigarh
Bachelor of Engineering (B.E.)	Sant Longowal Institute of Engineering & Technology
Diploma In Computer Engineering	Government Polytechnic Kangra (H.P.)

Career Profile

Dr. Yashwant Singh is Professor and Head in the Department of Computer Science & Information Technology at the Central University of Jammu where he has been a faculty member since 2017. Presently he is officiating Registrar since March 2022. Prior to this, he was at Jaypee University of Information Technology for 10 Years. **Yashwant** completed his Ph.D. in Computer Science from Himachal Pradesh University Shimla, his Post Graduate study from Punjab Engineering College Chandigarh (PEC), and his undergraduate studies from SLIET Longowal. His research interests lie in the area of Internet of Things, ICS/SCADA Cyber Security, Wireless Sensor Networks, Vulnerability Assessment, ranging from theory, design to implementation. He has collaborated actively with researchers in several other disciplines of computer science, particularly Machine Learning, Electrical Engineering

and Control Systems.

Yashwant has served on Thirty International Conference and Workshop Program Committees and served as the General Chair for PDGC-2014, ICRIC-2018, ICRIC-2019, ICRIC-2020, and ICRIC-2021. He currently serves as coordinator of DRDO sponsored Kalam Centre for Science and Technology (KCST), Computational System Security vertical at Central University of Jammu.

Yashwant has published more than 100 Research Papers in International Journals, International Conferences, and Book Chapters of reputed publishers that are indexed in SCI and SCOPUS. He has three Research Projects worth Rs.10.5 Crores in his credit from DRDO and Rs. 12.19 Lakhs from NCW. He has guided 4 Ph.D., 30 M.Tech. students and guiding 6 Ph.Ds and 5 M.Tech. students.

Prof. Yashwant Has visited 8 countries for his academic visits e.g. U.K., Germany, Poland, Czech Republic, Hungary, Slovakia, Austria, Romania. He is Visiting Professor at Jan Wyzykowski University, Polkowice, Poland.

Administrative Assignments

1. **Registrar(i/c)** since March, 2022
2. **BoS Member**, University of Ladakh, for the Session 2022-23
3. **Member** of Directorate of Internal Quality Assurance, 06 January, 2022.
4. **HoD**, Department of Tourism and Travel Management, Central University of Jammu, (28-09-2021 to till Date)
5. **Convener** Data Centre, Central University of Jammu, 24-09-2021.
6. **Member IQAC**, Central University of Jammu
7. **Nodal Officer**, National Apprenticeship Training Scheme (NATS)
8. **Nodal Officer**, AICTE, Central University of Jammu
9. **Coordinator**, Computational System Security vertical of Kalam Centre for Science and Technology sponsored by DRDO, Govt. of India.
10. **HoD**, Department of Computer Science and Information Technology, Central University of Jammu (September 24, 2018 to till date)
11. **Director** Physical Education (i/c), Central University of Jammu (21-01-2021 to till date)
12. **Member** of Academic Council Central University of Jammu, 23 May, 2019.
13. **Member**, BoS, Department of Public Policy and Public Administration, Central University of Jammu (04-01-2021 to 04-01-2024)
14. **Convener**, ICT Cell, Central University of Jammu (October 29, 2018 to till date)
15. **Coordinator**, Department of Computer Science and Information Technology, Central University of Jammu (November 27, 2017 to September 23, 2018)
16. **Coordinator**, Digital Centre, Central University of Jammu (October 20, 2017 to October 28, 2018)

Areas of Interest / Specialization

1. Internet of Things (IoT): Vulnerability Assessment in IoT and Embedded Devices, Energy Efficiency and Interoperability
2. Wireless Sensor Networks (WSN): Opportunistic Routing and node and Network Security
3. Cyber Physical System: ICS/SCADA, Cyber Security

**Subjects
Taught**

1. Internet of Things
2. Data Communication Computer Networks
3. Wireless Sensor Networks
4. Advanced Data Structures
5. Advanced Database Management Systems
6. Advances in Computer Networks
7. Advanced Software Engineering, Etc.

**Research
Guidance**

Ph.D. Supervision			
SN	Name	Title of the Thesis	Detail
1	Ms. Urvashi Chugh (116205)	Clustering and Change Point Detection in Wireless Sensor Networks for Fire Detection Application	Completed (12/02/2017)
2	Mr. Nagesh Kumar (136214)	On Security and Opportunistic Routing in Wireless Sensor Networks	Completed (09/06/ 2018)
3	Ms.Vandana Mohindru (136210)	Prevention of Node Clone Attack: Secure and Energy Efficient Algorithms in WSN	Completed (13/07/ 2019)
4	Mr.Deep Kumar Bangotra (0150518)	Intelligent and Secure Opportunistic Routing in Wireless Sensor Networks	Completed (12/10/2021)
5	Ms. Pooja Anand (0250518) 2018- Present	Intelligent and Secure Vulnerability Assessment Framework for Internet of Things and Embedded Devices	Pursuing
6	Ms. Bharti Rana (0450519) 2019- Present	Efficient Data Routing in Distributed Heterogeneous Internet of Things (IoT) Networks	Pursuing
7	Mr. Zakir Ahmad Sheikh(0950520) 2020-Present	ICS/SCADA Security	Pursuing
8	Mr. Ajay Kumar (0150520) 2020-Present	Secure and trust based data Sharing and management for UAV	Pursuing
9	Ms Sheerin Zadoo (21PCST04) 2021-present	Energy trading in IoT	Pursuing
10	Ms. Sheikh Imroja Manzoor (21PCST03) 2021- present	Federated Learning in IoT	Pursuing

***Supervised 30 M.Tech. Dissertations**

Journal Publications

1. Zakir Ahmad Sheikh, Yashwant Singh, Pradeep Kumar Singh, and Paulo J. Sequeira Gonçalves. 2023. "Defending the Defender: Adversarial Learning Based Defending Strategy for Learning Based Security Methods in Cyber-Physical Systems (CPS)" *Sensors* 23, No. 12: 5459, June 2023 [IF: 3.68]
<https://doi.org/10.3390/s23125459>
2. Sheikh Imroza Manzoor, Sanjeev Jain, Yashwant Singh, Harvinder Singh "Federated Learning based Privacy Ensured Sensor Communication in IoT Networks: A Taxonomy, Threats and Attacks." *IEEE Access* (2023), Volume 11, Pages 42248 - 42275, April 2023. [IF: 3.476]
<https://doi.org/10.1109/ACCESS.2023.3269880>
3. Ajay Kumar, Mayank Chopra, Yashwant Singh, Neerendra Kumar, "Neoteric Trends of Unmanned Aerial Vehicle (UAV) Research: A Scientometric Analysis." *Journal of Scientometric Research* 12.1, pp 98-113, 2023.
<https://doi.org/JScientometRes-12-1-098>
4. Zakir Ahmad Sheikh, Yashwant Singh, Pradeep Kumar Singh, Kayhan, Zrar Ghafoor, "Intelligent and secure framework for critical infrastructure (CPS): Current trends, challenges, and future scope", *Computer Communication*, Elsevier, Volume 193, Pages 302-331, September 2022. [IF:5.047]
<https://doi.org/10.1016/j.comcom.2022.07.007>
5. Bharti Rana, Yashwant Singh, Pradeep Kumar Singh, Kayhan Zarar, Ghafoor, Sachin Shretha, "A hybrid approach for energy-efficient routing in IoT using duty cycling and improved ant colony", *IET Communications*, Wiley, [IF:1.345]
<https://doi.org/10.1049/cmu2.12539>
6. Zakir Ahmad Sheikh, Yashwant Singh, Sudeep Tanwar, Ravi Sharma, Florian Emilian Turcanu, Maria Simona Raboca, "EISM-CPS: An Enhanced Intelligent Security Methodology for Cyber-Physical Systems through Hyper-Parameter Optimization", *Mathematics*, MDPI, 11(1), 189, 2023. [IF:2.592]
<https://doi.org/10.3390/math11010189>
7. Simran, Yashwant Singh and Bharti Rana, "PSGWO: An Energy-efficient Framework in IoT Based on Swarm Intelligence", *International Journal of Sensor, Wireless Communication and Control*, Bentham Science, Volume 12, Issue 8, 2022.
<https://doi.org/10.2174/2210327913666221219151456>
8. Anand, P., Singh, Y., Singh, H. et al. SALT: transfer learning-based threat model for attack detection in smart home. *Scientific Report* 12, 12247 (2022). [IF 4.99]
<https://doi.org/10.1038/s41598-022-16261-9>
9. Umaira Ahad, Yashwant Singh, Pooja Anand, Zakir Ahmad Sheikh and Pradeep Kumar Singhy, "Intrusion Detection System Model for IoT Networks Using Ensemble Learning", *Journal of Interconnection Networks*, Vol. 22, No. 3 (2022) 2145008 (25 pages). World Scientific Publishing Company, 2022.
<https://doi.org/10.1142/S0219265921450080>
10. Rayeesa Malik, Yashwant Singh, Zakir Ahmad Sheikh, Pooja Anand, Pradeep Kumar Singh, Tewabe Chekole Workneh, "An Improved Deep Belief Network IDS on IoT-Based Network for Traffic Systems", *Hindawi*, *Journal of Advanced Transportation*, Volume 2022, Article ID 7892130, 17 pages [IF 2.41]
<https://doi.org/10.1155/2022/7892130>
11. Deep Kumar Bangotra, Yashwant Singh, Nagesh Kumar, Pradeep Kumar Singh, Adegoke Ojeniyi, "Energy-Efficient and Secure Opportunistic Routing Protocol for WSN: Performance Analysis with Nature-Inspired Algorithms and Its Application in Biomedical Applications", *Hindawi*, *BioMed Research*

- International, Volume 2022, Article ID 1976694, 13 pages [IF 2.58]
<https://doi.org/10.1155/2022/1976694>
12. Bharti Rana, Yashwant Singh and Harvinder Singh, "Metaheuristic Routing: A Taxonomy and Energy-Efficient Framework for Internet of Things," in **IEEE Access**, vol. 9, pp. 155673-155698, 2021. [IF 3.367]
<https://doi.org/10.1109/ACCESS.2021.3128814>
 13. Pooja Anand, Yashwant Singh, Arvind Selwal, Pradeep Kumar Singh, Kayhan Zrar Ghafoor, "IVQFIoT: Intelligent vulnerability quantification framework for scoring internet of things vulnerabilities", **Expert Systems Wiley**, 1–19. [IF 2.587]
<https://doi.org/10.1111/exsy.12829>
 14. Deep Kumar Bangotra, Yashwant Singh, Arvind Selwal, Nagesh Kumar, Pradeep Kumar Singh, "A Trust Based Secure Intelligent Opportunistic Routing Protocol for Wireless Sensor Networks", **Wireless Personal Communication, Springer**, 2021, 116(202), 3887. [IF 1.2]
<https://doi.org/10.1007/s11277-021-08564-3>
 15. Parushi Malhotra, Yashwant Singh, Pooja Anand, Deep Kumar Bangotra, Pradeep Kumar Singh and Wei-Chiang Hong, "Internet of Things: Evolution, Concerns and Security Challenges", **Sensors , MDPI**, 21, 1809, 2021. [IF 3.275]
<https://doi.org/10.3390/s21051809>
 16. Bharti Rana, Yashwant Singh, Pradeep Kumar Singh, "A systematic survey on internet of things: Energy efficiency and interoperability perspective", **Transaction on Emerging Telecommunication Technologies, Wiley**, 2020;e4166. [IF 1.590]
<https://doi.org/10.1002/ett.4166>
 17. Pooja Anand, Yashwant Singh, Arvind Selwal, Mamoun Alazab, Sudeep Tanwar, Neeraj Kumar, "IoT Vulnerability Assessment for Sustainable Computing: Threats, Current Solutions, and Open Challenges", **IEEE Access**, Vol 08. Pp 168825-168853, 2020. [IF 4.64].
<https://doi.org/10.1109/ACCESS.2020.3022842>
 18. Pooja Anand, Yashwant Singh, Arvind Selwal, Pradeep Kumar Singh, Raluca Andreea Felseghi, Maria Simona Raboaca, "IoVT: Internet of Vulnerable Things? Threat Architecture, Attack Surfaces, and Vulnerabilities in Internet of Things and Its Applications towards Smart Grids", **Energies MDPI**, Vol. 13(18), pp 1-23, 2020. [IF 3.06]
<https://doi.org/10.3390/en13184813>
 19. Deep Kumar Bangotra, Yashwant Singh, Arvind Selwal, Nagesh Kumar, Pradeep Kumar Singh, Wei-Chiang Hong, "An Intelligent Opportunistic Routing Algorithm for Wireless Sensor Networks and Its Application Towards e-Healthcare", **Sensors, MDPI**, 20(14), 3887, 2020. [IF 3.275]
<https://doi.org/10.3390/s20143887>
 20. Nagesh Kumar*, Yashwant Singh, "An Energy Efficient and Reliable Opportunistic Routing for Wireless Sensor Networks", **Journal Name: International Journal of Sensors, Wireless Communications and Control, Bentham Science**, Volume 10, Issue 1, 2020. <https://doi.org/10.2174/2210327910999200503033802>
 21. Deep Kumar Bangotra, Yashwant Singh, Arvind K Selwal, "An Intelligent Opportunistic Routing Protocol for Big Data in WSNs", **International Journal of Multimedia Data Engineering and Management (IJMDEM), IGI Global**, 11(1), 2020
<https://doi.org/10.4018/IJMDEM.2020010102>
 22. Vandana Mohindru, Yashwant Singh, Ravindara Bhatt, "Reauthentication Scheme for Mobile Wireless Sensor Networks" **Sustainable Computing**,

- Informatics and Systems, **Elsevier**, Vol 23, pp 158-166, 2019.
<https://doi.org/10.1016/j.suscom.2019.07.010>
23. Vandana Mohindru, Yashwant Singh, Ravindara Bhatt, "Hybrid Cryptographic Algorithm for Securing Wireless Sensor Networks from Node Clone Attack", *Recent Advances in Electrical and Electronic Engineering*, **Bentham Science**, Vol 13, pp251-259, 2020 <https://doi.org/10.2174/2352096512666190215125026>
 24. Vandana Mohindru, Yashwant Singh, Ravindara Bhatt, "Securing Wireless Sensor Networks From Node Clone Attack: A Lightweight Message Authentication algorithm", *International Journal of Information and Computer Security(IJICS)*, **InderScience Publishers** Vol 12 No 2/3. 2020, <https://doi.org/10.1504/IJICS.2020.105174>
 25. Vandana Mohindru and Yashwant Singh (2018), "Node authentication algorithm for securing static wireless sensor networks from node clone attack", *International Journal of Information and Computer Security (IJICS)*, **InderScience Publishers** Vol. 10, Nos. 2/3,pp 129-148, 2018. DOI: 10.1504/IJICS.2018.10012571.
 26. Nagesh Kumar, Yashwant Singh and Pradeep Kumar Singh (2017), "An Energy Efficient Trust-Aware Opportunistic Routing Protocol for Wireless Sensor Network," *International Journal of Information System Modeling and Design (IJISMD)* **IGI Global**, Vol. 8, No. 2, pp. 30-44, 2017. DOI:10.4018/IJISMD.2017040102.
 27. Nagesh Kumar, Yashwant Singh and Pradeep Kumar Singh (2017), "Reputation-based Energy Efficient Opportunistic Routing for Wireless Sensor Network," *Journal of Telecommunication, Electronic and Computer Engineering (JTEC)*, Vol. 9, No. 3-6, pp. 29-33, 2017.
 28. Urvashi Chugh, Yashwant Singh, M.V. Ramana Murthy (2015). Information Fusion and Change Point Detection in Mutual Exclusive Distributive Clustering, *Procedia Computer Science*, Vol. 65, pp. 592-600, 2015.
 29. Urvashi Chugh, Yashwant Singh, M.V. Ramana Murthy (2015). Change Point Detection in the midst of Mutual Exclusive Distributive Clustering Protocol. *Wulfenia Journal*, Klagenfurt, Austria, Vol 22 No.10, pp.311-319, 2015.
 30. Yashwant Singh, Urvashi Chugh (2014). Mutual Exclusive Distributive Clustering (MEDC) Protocol for Wireless Sensor Networks. *International Journal of Sensors, Wireless Communications and Control*, **Bentham Science Publishers** Vol.3, No. 2, pp., 101-107, 2014. DOI: 10.2174/221032790302140505100253.
 31. Sheikh Shahid Ali, Yashwant Singh, "On Opportunistic Routing in Wireless Sensor Networks", *International Journal of Computer Sciences and Engineering* Vol.6(3), Apr 2018, pp 21-25, 2018.
 32. Shahid Ul Haq, Yashwant Singh, "On IoT Security Models: Traditional and Blockchain", *International Journal of Computer Sciences and Engineering* Vol.6(3), Apr 2018, pp 26-31, 2018.
 33. Towseef Ahmad Wani, Yashwant Singh, "On Message Dissemination And Event Detection In Vanet", *International Journal of Computer Sciences and Engineering* Vol.6(3), Apr 2018, pp 42-45, 2018.
 34. Shamsul Haq, Yashwant Singh (2018), "On Botnet Detection in Networks, based on Traffic Monitoring", *An International Journal of Engineering Science*, Special Issue March 2018, Vol. 27, pp 61-68, UGC Approved Journal (S.No.63019) , 2018.
 35. Farooq Ayoub Dar, Yashwant Singh (2018), "Comparative Analysis of Medical Diagnostic Techniques Using ANN", *An International Journal of Engineering Science*, Special Issue March 2018, Vol. 27, pp 104-114, UGC Approved Journal

- (S.No.63019) , 2018.
36. Imtiaz Ahmed, Yashwant Singh, (2018), "A fairness framework for resource allocation in cloud computing", An International Journal of Engineering Science, Special Issue March 2018, Vol. 27, pp 115-121, 2018. UGC Approved Journal (S.No.63019).
 37. Pooja Rani, Archana Gupta, Yashwant Singh, "Multiple Event Detection In Wireless Sensor Networks Using Compressed Sensing: Health Monitoring Perspective", International Journal of Computer Sciences and Engineering, Vol.6 , Issue.1 , pp.39-45, Jan-2018.
 38. Archana Gupta, Pooja Rani, Yashwant Singh, "Real Time Remote Wireless Sensor Network for Water Quality Monitoring", International Journal of Computer Sciences and Engineering, Vol.5 , Issue.11 , pp.94-99, Nov-2017.
 39. Puneet Bhushan, Pradeep Kumar Singh ,Yashwant Singh (2016). Energy Consumption Pattern at Household Level: a micro level study of Himachal Pradesh. Indian Journal of Science and Technology, Vol 9 No 32, 1-5, 2016. **DOI:** 10.17485/ijst/2016/v9i32/100216.
 40. Mohinder Kaur Sidhu, Yashwant Singh, Pradeep Kumar Singh (2016). Localization and Classification of Species in a Habitat in WSN: A Species Perspective. International Journal of Computer Applications, Proceedings, RICSIT 2016 (1), pp 8-12.
 41. Aditi Zear, Pradeep Kumar Singh , Yashwant Singh (2016). Intelligent Transport System: a progressive review. Indian Journal of Science and Technology, Vol 9, No.32, pp 1-8. DOI: 10.17485/ijst/2016/v9i32/100713
 42. Abhishek Jaswal, Pradeep Kumar Singh , Yashwant Singh (2016). 5G: Survey of Technologies and Challenges. International Journal of Latest Trends in Engineering and Technology (IJLTET), special issue, pp 1-5, 2016.
 43. Kshitiza Vasudeva, Pradeep Kumar Singh , Yashwant Singh (2016). A Methodical Review on Issues of Medical Image Management System with Watermarking Approach. Indian Journal of Science and Technology, Vol. 9, No.32, pp1-6, 2016. **DOI:** 10.17485/ijst/2016/v9i32/100188.
 44. Nagesh Kumar, Yashwant Singh (2016), An Energy Efficient Opportunistic Routing Metric for Wireless Sensor Networks. Indian Journal of Science and Technology, Vol. 9, No.32, 2016. **DOI:** 10.17485/ijst/2016/v9i32/100197.
 45. Vandana Mohindru, Yashwant Singh (2016), Efficient Approach for Securing Message Communication in Wireless Sensor Networks from Node Clone Attack. Indian Journal of Science and Technology, Vol .9, No. 32, 2016. **DOI:** 10.17485/ijst/2016/v9i32/100725.
 46. Abhishek Jaswal, Yashwant Singh (2016). Event Detection and Pattern Recognition using Support Vector Machine in Meteorology. International Journal of Computer Applications, RICSIT Special Issue (2), pp 20-23, 2016.
 47. Mohinder Kaur Sidhu, Yashwant Singh, Pradeep Kumar Singh (2016). Localization and Classification of Species in a Habitat in WSN: A Species Perspective. International Journal of Computer Applications, Special Issue (1) pp 8-12, 2016.
 48. Aditi Kansal, Yashwant Singh (2014). Survey on Machine Learning Techniques for Event Detection in Wireless Sensor Networks. International Journal of Modern Computer Science (IJMCS), Vol.2 , No.1, pp.1-7, 2014.
 49. Balmukund Mishra, Vandana Mohindru, Yashwant Singh (2014). Comparative Analysis WSN MAC protocol. Journal of Basic and Applied Engineering Research (JBAER) , Vol. 1, No.6, pp.13-18, 2014.
 50. Mayank Sharma, Yashwant Singh, Nagesh Kumar (2014). Opportunistic Routing

- in Wireless Sensor Network: A Comparative Analysis. Journal of Basic and Applied Engineering Research (JBAER) , Vol.1, No.6,pp. 94-98, 2014.
51. Yashwant Singh, Ankur Nadda, Sahil Gupta (2013). Data Fusion in Wireless Sensor Networks: A Perspective. International Journal of Information and Communication Technology, Vol. 6, No. (1-2), pp.54-77, 2013.
 52. Chhavi Gupta, Rashmi Sharma, Neha Agarwal, Yashwant Singh (2013). Fault Tolerant Event Detection in Distributed WSN via Pivotal Messaging. International Journal of Computer and Technology, Vol.7, No. 1, pp. 463-472, 2013.
 53. Yashwant Singh, Vandana Mohindru, Pawan Kumar Gangwar (2013). Remote System Monitor for Linux: A Perspective. International Journal of Modern Computer Science and Applications, Vol. 1, No. 4, pp.8-13, 2013.
 54. Yashwant Singh, Manu Sood, Tarun Gupta, Atish Thakur (2011). Incorporating AOSD to Enhance Model Driven Architecture. Journal of Software Engineering and Applications, Vol. 4, No.1, pp.18-22, 2011.
 55. Yashwant Singh, Manu Sood, Tarun Gupta, Atish Thakur (2010). Combining AOSD into MDA: A Perspective. International Journal of Computer Engineering and Computer Applications, Vol. 5, No.1, pp.38-46, 2010.
 56. Yashwant Singh, Manu Sood (2010). The Impact of the Computational Independent Model for Enterprise Information System Development. International Journal of Computer Applications, Vol. 11, No.8, pp.21-26, 2010.

Books

1. Susheela Hooda, Vandana Mohindru Sood, **Yashwant Singh**, Sandeep Dalal, Manu Sood, eds. "Agile Software Development: Trends, Challenges and Applications." (2023).
2. **Yashwant Singh**, Pradeep Kumar Singh, Mahesh Kumar H. Kolekar, Arpan Kumar Kar, Paulo J.S. Goncalves, "Recent Innovation in Computing- Proceedings of ICRIC-2022, Vol-1", **LNEE, Springer Nature** Switzerland, ISBN: 978-981-19-9875-1, 2022
3. **Yashwant Singh**, Pradeep Kumar Singh, Jitendra Kumar Chhabra, Chaman Verma, Illes Joltan "Recent Innovation in Computing- Proceedings of ICRIC-2022, Vol-2", **LNEE, Springer Nature** Switzerland, ISBN: 978-981-99-0600-0, 2022
4. **Yashwant Singh**, Pradeep Kumar Singh, Mahesh Kumar H. Kolekar, Arpan Kumar Kar, Paulo J.S. Goncalves, "Recent Innovation in Computing- Proceedings of ICRIC-2021, Vol-1", **LNEE, Springer Nature** Switzerland, ISBN: 978-981-16-8247-6, 2021
5. **Yashwant Singh**, Pradeep Kumar Singh, Jitendra Kumar Chhabra, Chaman Verma, "Recent Innovation in Computing- Proceedings of ICRIC-2021, Vol-2", **LNEE, Springer Nature** Switzerland, ISBN: 978-981-16-8891-1, 2021
6. Vandana Mohindru, **Yashwant Singh**, Ravindara Bhatt, Anuj Kumar Gupta, "Unmanned Aerial Vehicles for Internet of Things: Concepts, Techniques and Applications", **Scrivener Publishing LLC. Wiley**, 2021, ISBN: 978-1-119-76882-1, 2021
7. Guarav Gupta, **Yashwant Singh**, Nagesh Kumar, Varun Jaiswal, "Mobile Health: Advances in Research and Applications", **NOVA Science Publishers Inc.** , 2021, ISBN: 978-1-53619-468-5, 2021
8. **Yashwant Singh**, Arpan Kumar Kar, Pradeep Kumar Singh, Mahesh Kumar H. Kolekar, J. K Chhabra, A.Sen, "Proceedings of ICRIC 2020-Recent Innovation in Computing", **LNEE, Springer Nature** Switzerland, ISBN: 978-981-15-8297-4, 2020
9. **Yashwant Singh**, Arpan Kumar Kar, Pradeep Kumar Singh, Mahesh Kumar H. Kolekar, Sudeep Kumar Tanwar, "Proceedings of ICRIC 2019-Recent Innovation in

- Computing”, **LNEE, Springer Nature** Switzerland, ISBN: 978-3-030-29406-9, 2019
10. **Yashwant Singh**, Vivek Kumar Sehgal, Nitin, Satya Prakash Ghrera (2014). *Proceedings of 3rd International Conference on Parallel Distributed and Grid Computing*. USA: **IEEE Press**. ISBN : 978-1-4799-7683-6, 2014
 11. **Pradeep Kumar Singh, Yashwant Singh**, *Futuristic Trends in Computing Technologies, vol 9*, Malaysia, JTEC, ISSN: 2180-1843, eISSN: 2289-8131, 2017.
 12. **Yashwant Singh, Vandana Mohindru** (2017). *Wireless Sensor Networks Security Attacks-A Node Clone Attack (1st)*. Germany: Lambert Academic Publishing, ISBN : 978-3-65980-624-7, 2017

Chapter in Books

1. **Yashwant Singh** and Manu Sood (2014), “Transformation of Platform-Independent Model into Platform-Specific Model in Model-Driven Architecture,” *Uncovering Essential Software Artifacts through Business Process Archeology*. **IGI Global**, 2014. 88-113. Web. 7 Feb. 2014. Doi:10.4018/978-1-4666-4667-4.ch004, 2014.
2. Nagesh Kumar, and **Yashwant Singh** (2016), “Routing Protocols in Wireless Sensor Networks.” *Handbook of Research on Advanced Wireless Sensor Network Applications, Protocols, and Architectures*. **IGI Global**, 2016. 86-128. Web. 3 Aug. 2016. Doi:10.4018/978-1-5225-0486-3.ch004Journal(s), 2016.
3. Bharti Rana and Yashwant Singh, “Internet of Things and UAV: An interoperability Perspective”, *Unmanned Aerial Vehicles for Internet of Things- Concepts, Techniques and Applications*, Scrivener Publishing **WILEY**, 2021.
4. Zakir Ahmad Sheikh and Yashwant Singh. "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 **WILEY**, 2021.
5. Bharti Rana and Yashwant Singh. "Interoperable Agile IoT." *Agile Software Development: Trends, Challenges and Applications*, Scrivener Publishing **WILEY**, 2023.
6. Pooja Anand and Yashwant Singh. "Vulnerability Assessment Tools for IoT: An Agile Approach." *Agile Software Development: Trends, Challenges and Applications*, Scrivener Publishing **WILEY**, 2023.

Articles/ Research Paper in Books

1. Archana Sharma, **Yashwant Singh**, “On Security of Opportunistic Routing Protocol in Wireless Sensor Networks”, *Proceedings of ICRIC-2019*, **LNEE Springer Nature** Switzerland, ISBN: 978-3-030-29406-9, 2019
2. Deep Kumar Bangotra, **Yashwant Singh**, Arvind Selwal "Intelligent Opportunistic Routing Protocol in Wireless Sensor Networks: A Security Perspective" *Proceedings of ICRIC-2020*, **LNEE Springer Nature** Switzerland, ISBN: 978-981-15-8297-4, pp 221-233, 2020
3. Pooja Anand, **Yashwant Singh**, Arvind Selwal "Internet of Things (IoT): Vulnerabilities and Remediation Strategies" *Proceedings of ICRIC-2020*, **LNEE Springer Nature** Switzerland, ISBN: 978-981-15-8297-4, pp 265-273, 2020
4. Zakir Ahmad Sheikh, **Yashwant Singh**, "Lightweight De-authentication DoS Attack Detection Methodology for 802.11 Networks Using Sniffing" *Proceedings of IC4S-2020*, **LNEE Springer Nature** Switzerland, ISBN: 978-981-16-0733-2, pp 67-80, 2020
5. Mahak Mahapara, **Yashwant Singh**, "Threat Modelling and Risk Assessment in Internet of Things: A Review" *Proceedings of IC4S-2020*, **LNEE Springer Nature**

- Switzerland, ISBN: 978-981-16-0733-2, pp 293-305, 2020
6. Parushi Malhotra, Yashwant Singh, "Deep Learning-Based Attack Detection in the Internet of Things" Proceedings of IC4S-2020, LNEE Springer Nature Switzerland, ISBN: 978-981-16-0733-2, pp 307-319, 2020
 7. Bharti Rana, **Yashwant Singh**, " Duty Cycling Techniques in IoT-Energy Efficiency Perspective", Recent Innovations in Computing-Proceedings of ICRIC-2021, LNEE Springer Nature Switzerland , ISBN: 978-981-16-8247-6, pp-505-512, 2021
 8. Pooja Anand, **Yashwant Singh**, " Learning based Techniques for accessing zero day attacks and vulnerabilities in IoT", Recent Innovations in Computing-Proceedings of ICRIC-2021, LNEE Springer Nature Switzerland, ISBN: 978-981-16-8247-6, pp-497-504, 2021
 9. Ajay Kumar, **Yashwant Singh**, " Secure Unmanned Aerial Vehicle(UAV) Communication using Blockchain Technology", Recent Innovations in Computing-Proceedings of ICRIC-2021, LNEE Springer Nature Switzerland , ISBN: 978-981-16-8247-6, pp-201-211, 2021
 10. Gawhar Hameed, **Yashwant Singh**, Shahid Ul Haq, Bharti Rana, "BlockChain Based Model for Secure IoT Communication in Smart Health Care", Emerging Technologies for Computing Communication and Smart Cities (ETCCS-2021) LNEE Springer Nature Switzerland, ISBN: 978-981-16-8247-6, pp-201-21, 2021
 11. Pallavi Sangra, **Yashwant Singh**, Bharti Rana, " Energy Efficiency in IoT based Smart Health care", Computing Communication and Cyber security (IC4S-2021), LNEE Springer Nature Switzerland, , ISBN: 978-981-16-8247-6, pp-201-21, 2021
 12. Choudhary, V., **Singh, Yashwant.**, Anand, P. (2022). Smart Traffic Monitoring with Fog and Cloud Computing. In: Singh, P.K., Kolekar, M.H., Tanwar, S., Wierzchoń, S.T., Bhatnagar, R.K. (eds) Emerging Technologies for Computing, Communication and Smart Cities. Lecture Notes in Electrical Engineering, vol 875. Springer, Singapore. , 2022
https://doi.org/10.1007/978-981-19-0284-0_24
 13. Ahad, U., **Singh, Yashwant.**, Anand, P. (2022). Emerging Security Issues in IoT. In: Singh, P.K., Kolekar, M.H., Tanwar, S., Wierzchoń, S.T., Bhatnagar, R.K. (eds) Emerging Technologies for Computing, Communication and Smart Cities. Lecture Notes in Electrical Engineering, vol 875. Springer, Singapore, 2022
https://doi.org/10.1007/978-981-19-0284-0_55
 14. Muzafar, R., **Singh, Yashwant.**, Anand, P., Sheikh, Z.A. (2022). Review on Security of Internet of Things: Security Requirements, Threats, and Proposed Solutions. In: Singh, P.K., Kolekar, M.H., Tanwar, S., Wierzchoń, S.T., Bhatnagar, R.K. (eds) Emerging Technologies for Computing, Communication and Smart Cities. Lecture Notes in Electrical Engineering, vol 875. Springer, Singapore, 2022

Conference Proceedings

1. Bharti Rana and Yashwant Singh. "Duty—Cycling Based Energy-Efficient Framework for Smart Healthcare System (SHS)." Proceedings of International Conference on Information Technology and Applications: ICITA 2022. Singapore: Springer Nature Singapore, 2023.
2. Simran, Yashwant Singh, and Bharti Rana. "Swarm Intelligence-Based Energy-Efficient Framework in IoT." Proceedings of International Conference on Recent Innovations in Computing: ICRIC 2022, Volume 2. Singapore: Springer Nature Singapore, 2023.
3. Umer Gull, Yashwant Singh, and Bharti Rana. "Energy-Efficient Priority-Based Routing Model for Smart Health Care." Proceedings of International Conference on Recent Innovations in Computing: ICRIC 2022, Volume 2. Singapore: Springer

- Nature Singapore, 2023.
4. Sonal Sharma, Yashwant Singh, and Pooja Anand. "Time Series-Based IDS for Detecting Botnet Attacks in IoT and Embedded Devices." Proceedings of International Conference on Recent Innovations in Computing: ICRIC 2022, Volume 2. Singapore: Springer Nature Singapore, 2023.
 5. Ruxana Jabeen, Yashwant Singh, and Zakir Ahmad Sheikh. "Machine Learning for Security of Cyber-Physical Systems and Security of Machine Learning: Attacks, Defences, and Current Approaches." Proceedings of International Conference on Recent Innovations in Computing: ICRIC 2022, Volume 2. Singapore: Springer Nature Singapore, 2023.
 6. Abhiudhaya Upadhyaya, Yashwant Singh, and Pooja Anand. "Blockchain for IoT: A Comprehensive Review for Precision Agricultural Networks." Proceedings of International Conference on Recent Innovations in Computing: ICRIC 2022, Volume 2. Singapore: Springer Nature Singapore, 2023.
 7. Bhat Snober Ali, Yashwant Singh, Pradeep Kumar Singh, Maria Simona Raboaca, "DYNAMIC ACCESS CONTROL IN IOT: MONITORING USER BEHAVIOR USING SMART CONTRACTS" ECAI 2020 - International Conference – 12th Edition Electronics, Computers and Artificial Intelligence 25 June -27 June,2020, Pitesti, ROMANIA, pp 1-6, 2019.
 8. Yashwant Singh, Jahangir Ahmad Lone, Zdzislaw Polkowski, Jayneel Vora, Sudeep Tanwar, Sudhanshu Tyagi, Pradeep Kumar Singh, "Deployment and Coverage in Wireless Sensor Networks: A Perspective", ECAI 2019 - International Conference – 11th Edition Electronics, Computers and Artificial Intelligence 27 June -29 June,2019, Pitesti, ROMANIA, pp 1-6, 2019.
 9. Zdzislaw Polkowski, Jayneel Vora, Sudeep Tanwar, Sudhanshu Tyagi, Pradeep Kumar Singh, Yashwant Singh, "Machine Learning-based Software Effort Estimation : An Analysis", ECAI 2019 - International Conference – 11th Edition Electronics, Computers and Artificial Intelligence 27 June -29 June,2019, Pitesti, ROMANIA, pp 1-6, 2019.
 10. Vandana Mohindru, Utkarsh Chitranshi, Ravindara Bhatt, Yashwant Singh, "Possibilities of Block Chain in Indian Market and Notably In Advertising Industry", 5th IEEE International Conference on Signal Processing, Computing and Control (ISPCC 2k19), Oct 10-12, 2019, JUIT, Solan, India. Pp 84-89, 2019.
 11. Deep Kumar Bangotra ; Yashwant Singh ; Arvind Selwal, "Machine Learning in Wireless Sensor Networks: Challenges and Opportunities", Proceedings of the 5th International Conference on Parallel Distributed and Grid Computing (PDGC-2018), Wagnaghat, India, 20-22 December, 2018, pp.534-539, **DOI:** 10.1109/PDGC.2018.8745845
 12. Vandana Mohindru ; Yashwant Singh ; Ravindara Bhatt, "A Review on Lightweight Node Authentication Algorithms in Wireless Sensor Networks" Proceedings of the 5th International Conference on Parallel Distributed and Grid Computing (PDGC-2018), Wagnaghat, India, 20-22 December, 2018, pp.517-521, **DOI:** 10.1109/PDGC.2018.8745800.
 13. Shamsul Haq and Yashwant Singh, "Botnet Detectio using Machine Learning", Proceedings of the 5th International Conference on Parallel Distributed and Grid Computing (PDGC-2018), Wagnaghat, India, 20-22 December, 2018, pp.240-245, **DOI:** 10.1109/PDGC.2018.8745912
 14. Vandana Mohindru and Y. Singh, "Performance analysis of Message Authentication Algorithms in WSN," In Proc. 4th IEEE International Conference on Signal Processing, Computing and Control (ISPCC- 2017), Wagnaghat, India, 2017, pp. 468-472, DOI: 10.1109/ISPCC.2017.8269724.

15. N. Kumar and Y. Singh, "Trust and packet load balancing based Secure Opportunistic Routing Protocol for WSN," In Proc. 4th IEEE International Conference on Signal Processing, Computing and Control (ISPCC- 2017), Wagnaghat, India, 2017, pp. 463-467, DOI:10.1109/ISPCC.2017. 8269723.
16. Nagesh Kumar, Yashwant Singh (2016). An Energy Efficient and Trust Management based Opportunistic Routing metric for Wireless Sensor Networks. Proceedings of the International Conference on Parallel Distributed and Grid Computing (PDGC-2016) [4th : Wagnaghat, India, India : 22-24 December, 2016], pp.611-616.
17. Urvashi Chugh, Yashwant Singh (2015). Clustering, Information Fusion and Event Detection in Wireless Sensor Networks: A Review. Proceedings of the IEEE Conference INDIACom [9th. : : 11-13 March, 2015], pp.-.
18. Mayank Sharma, Yashwant Singh (2015). Middle Position Dynamic Energy Opportunistic Routing For Wireless Sensor Networks. Proceedings of the International Conference on Advances in Computing, Communications and Informatics (ICACCI) [4th : Kerala, Kochi, India : August 10-13, 2015], pp.-.
19. Urvashi Chugh, Yashwant Singh, M.V. Ramana Murthy (2015). Comparative Analysis of HEED, MEDC, MEHEED. Proceedings of the Proceedings of the World Congress on Engineering and Computer Science [San Francisco, USA : October 21-23, 2015], pp.-.
20. Aditi Kansal , Yashwant Singh, Vandana Mohindru, Nagesh Sharma (2015). Detection of Forest Fires using Machine Learning Techniques: A perspective. Proceedings of the International Conference on Image , Information Processing (ICIIP) [3rd. : : Dec 21-24, 2015], pp.241-245.
21. Bamukund , Yashwant Singh (2015). An Approach Toward the Optimization of Witness Based Node Clone Attack. Proceedings of the International Conference on Image , Information Processing (ICIIP) [3rd. : : Dec 21-24, 2015], pp.506-510.
22. P.K. Gangwar, Yashwant Singh, V. Mohindru (2014). An Energy Efficient Zone-based Clustering Approach for Target Detection in Wireless Sensor Networks. Proceedings of the Recent Advances and Innovations in Engineering [Jaipur, India : 9-11 May 2014], pp.1-7.
23. Yashwant Singh, Urvashi Chugh (2014). MEHEED: Mutual Exclusive Hybrid Energy Efficient Distributed Clustering in Wireless Sensor Networks. Proceedings of the ELSEVIER ERCICA [Bangalore, India : August 1-2, 2014], pp.-.
24. Yashwant Singh, Pawan Kumar Gangwar, Vandana Mohindru (2014). Heterogeneous Sensor Networks for Target Detection: A WMSN Perspective. Proceedings of the ELSEVIER ERCICA [Bangalore, India : August 1-2, 2014], pp.-.
25. Yashwant Singh, Suman Saha, Urvashi Chugh, Chhavi Gupta (2013). Distributed Event Detection in Wireless Sensor Networks for Forest Fires. Proceedings of the International Conference on Modelling and Simulation [15th : Cambridge, UK : April 10-12, 2013], pp.634-640.
26. Yashwant Singh, Mayank Popli (2012). Energy reduction in weakly hard real time systems. Proceedings of the IEEE International Conference on Recent Advances in Information Technology [1st : Dhanbad, India : 15-17 March 2012], pp.909-915.
27. Yashwant Singh, Shivam Garg, Anshul Dhingra, Rajat Kumar Jain (2012). Software Engineering and Wireless Sensor Networks: A Perspective. Proceedings of the International Conference on Advance Computing and Communication Technologies [6th : : November 3-4], pp.3-6.
28. Yashwant Singh, Amit Chugh, Urvashi Chugh (2012). Self Healing Routing in Autonomic Wireless Sensor Networks. Proceedings of the International

- Conference on Advance Computing and Communication Technologies [6th : : November 3-4], pp.308-312.
29. Brahm Deo Sah, Yashwant Singh, Nitin (2011). Accumulation based Congestion Control Using Active Queue Management. Proceedings of the IEEE World Congress on Information and Communication Technologies [Mumbai, INDIA : December 11-14, 2011], pp.1159-1163.
 30. Yashwant Singh, Sood M. (2009). Models and transformations in MDA. Proceedings of the International Conference on Computational Intelligence, Communication Systems and Networks [1 : Indore : 23-25 July 2009], pp.253-258.
 31. Yashwant Singh, Sood M. (2009). Model driven architecture: A perspective. Proceedings of the IEEE International Advance Computing Conference [Patiala, Punjab: 6-7 March 2009],

**Conference /
Workshops/
Training
Organized**

1. **General Chair**, 2022 International Conference on Recent Innovations in Computing (ICRIC-2022), Central University of Jammu, May 13-14, 2022.
2. **General Chair**, 2021 International Conference on Recent Innovations in Computing (ICRIC-2021), Central University of Jammu, May 08-09, 2021.
3. **General Chair**, 2020 International Conference on Recent Innovations in Computing (ICRIC-2020), Central University of Jammu, March 20-21, 2020.
4. **General Chair**, 2019 International Conference on Recent Innovations in Computing (ICRIC-2019), Central University of Jammu, March 08-09, 2019.
5. **General Chair**, 2018 International Conference on Recent Innovations in Computing (ICRIC-2018), Central University of Jammu, March 05-06, 2018.
6. **General Chair**, 2014 3rd IEEE International Conference on Parallel, Distributed and Grid Computing (PDGC), Jaypee University of Information Technology, Wanknaghat, December, 11-13 , 2014, INDIA.
7. **Chief Coordinator** Workshop, Wireless Networks and Network Simulator (WNNS), at Jaypee University of Information Technology, Wanknaghat, July 9-10, 2012, INDIA.
8. **Coordinator**, Workshop, Data Mining and Parallel Computing, Conducted by Dr. Sanjay Ranka, University of Florida-USA at Jaypee University of Information Technology, Wanknaghat, August 2-5, 2011, INDIA.
9. **Coordinator**, Faculty Development Programme/Workshop on “Internet of Things” , AICTE Training and Learning Academy (ATAL), Jaipur, Organized by, Department of Computer Science & IT, Central University of Jammu, Jammu, October 14-18, 2019.
10. **Coordinator**, One week workshop/Training on “e-Suraksha” A practical Approach on Network and Web application Security, Central University of Jammu, December 10-14, 2018
11. Patron of One Week FDP/ Workshop on “Recent Trends in Security: IoT, Blockchain and Cyber Security-(RTS-2022)” organized by the Department of Computer Science and IT, Central University of Jammu from 19/09/2022 - 23/09/2022

Creation of ICT Mediated Teaching Learning Pedagogy and Content

1. Developed Scheme and Full Course with ppts on Introduction to Agroinformatics (IM401) for Leaders Institute, Queensland Australia.
2. Developed Course Structure for the School of Engineering and Technology, Kings's International University, Kingdom of Tonga.
3. Developed four lessons on computer Science and Information Technology for School of Open Learning, University of Delhi, 2022.
4. Developed Scheme and all Courses with ppts on Masters in Cyber Security for Leaders Institute, Queensland Australia, 2023.

Conference/ Workshops/ Training attended as Faculty Member

1. Session Chair, 2022 International Conference on Recent Innovations in Computing (ICRIC-2022), Central University of Jammu, May 13-14, 2022.
2. Session Chair, 2021 International Conference on Recent Innovations in Computing (ICRIC-2021), Central University of Jammu, May 08-09, 2021.
3. Participated in the Workshop cum Orientation Programme on Leadership in Educational Administration for Academic Administrators in Universities and Colleges organized by the Department of Educational Administration January 19-21, 2022, NIEPA, New Delhi.
4. Session Chair, 2021 international Conference on Furistic trends in Network and Communication Technologies (FTNCT-2021), Nirma University, Ahmdabad, February, 10-11, 2021, INDIA.
5. Coordinator, A webinar on "IoT Protocols: How Data Exchange Happens", Resource person "Shrikrishna from CDAC Bangalore, organized in collaboration with IEEE on 12-05-2021.
6. Session Chair, 2020 International Conference on Recent Innovations in Computing (ICRIC-2020), Central University of Jammu, March 20-21, 2020.
7. Participated in one day Workshop on MOOC organized by JUIT and IIT Roorkee at JUIT Wagnaghat, 2019
8. Session Chair, International Conference on Computing, Communication and Cyber Security (IC4S-2019), 12-13 October 2019.
9. Session Chair, ICIP 2019-The Fourth IEEE International Conference on Image Information Processing, Jaypee University of Information Technology, Wagnaghat, November 15-17, 2019, INDIA
10. Session Chair, 2019 international Conference on Furistic trends in Network and Communication Technologies (FTNCT-2019), Jaypee University of Information Technology, Wagnaghat, November, 22-23, 2019, C-DAC Mohali, INDIA.
11. Session Chair, International Conference on Innovations on Computing (ICIC-2019), 12-13 December 2019.
12. Session Chair, 2019 International Conference on Recent Innovations in Computing (ICRIC-2019), Central University of Jammu, March 08-09, 2019.
13. Workshop on University Enterprise Architecture Framework (UEAF), Indian Council of Social Science Research (ICSSR) North West Regional Centre, Punjab university Chandigarh, 12th Jan 2018.
14. Participated in Training programme on Management of Digital Hygiene: Staying Secure in Cyber Space, Sponsored by DST India under the "National Programme For Training Of Scientist And Technologists Working In Governement Sector", 08/10/2018 to 12/10/2018 , C-DAC, Mohali.
15. Participated in National Conference on Directors of Computer Centres in Central Universities, IITs, IIMs, IISERs and NITs on "Digital Transformation in Higher

- Education Institution” November 15-17, 2018 at Banaras Hindu University Varanasi, India.
16. Session Chair, 2018 5th IEEE International Conference on Parallel, Distributed and Grid Computing (PDGC), Jaypee University of Information Technology, Wagnaghat, December, 20-22 , 2018, INDIA.
 17. Session Chair, 2018 International Conference on Recent Innovations in Computing (ICRIC-2018), Central University of Jammu, March 05-06, 2018.
 18. Session Chair, 2018 international Conference on Furistic trends in Network and Communication Technologies (FTNCT-2018), Jaypee University of Information Technology, Wagnaghat, February, 09-10, 2018, INDIA.
 19. Session Chair, ICIIP 2017-The Third IEEE International Conference on Image Information Processing, Jaypee University of Information Technology, Wagnaghat, December 21-23, 2017, INDIA
 20. Session Chair, 2017 2nd International Conference on Recent Innovation in Computer Science and Information Technology (RICSIT-2017), Himachal Pradesh University Shimla, May, 19 , 2017, INDIA.
 21. Session Chair, 2016 4th IEEE International Conference on Parallel, Distributed and Grid Computing (PDGC), Jaypee University of Information Technology, Wagnaghat, December, 22-24 , 2016, INDIA.
 22. Session Chair, 2016 1st International Conference on Recent Innovation in Computer Science and Information Technology (RICSIT-2016), Himachal Pradesh University Shimla, May, 23 , 2017, INDIA
 23. Organizing Committee Member,, 2016 4th IEEE International Conference on Parallel, Distributed and Grid Computing (PDGC), Jaypee University of Information Technology, Wagnaghat, December, 22-24 , 2016, INDIA.
 24. Session Chair, 2015 3rd IEEE International Conference on Image Information Processing (ICIIP), Jaypee University of Information Technology, Wagnaghat, December, 21-24 , 2015, INDIA.
 25. Organizing Committee Chair, 2015 3rd IEEE International Conference on Image Information Processing (ICIIP), Jaypee University of Information Technology, Wagnaghat, December, 21-24 , 2015, INDIA.
 26. Session Chair, IEEE 4th International Conference on Advances in Computing, Communications & Informatics, SCMS School of Engineering and Technology, Kochi, Kerela, 10-13, 2015.
 27. Session Chair, 2014 3rd IEEE International Conference on Parallel, Distributed and Grid Computing (PDGC), Jaypee University of Information Technology, Wagnaghat, December, 11-13 , 2014, INDIA.
 28. Chief Coordinator Workshop, Wireless Networks and Network Simulator (WNNS), at Jaypee University of Information Technology, Wagnaghat, July 9-10, 2012, INDIA.
 29. Coordinator Workshop, Data Mining and Parallel Computing, Conducted by Dr. Sanjay Ranka, University of Florida-USA at Jaypee University of Information Technology, Wagnaghat, August 2-5, 2011, INDIA.
 30. Organizing Committee Chair, PDGC 2012-The First IEEE International Conference on Parallel, Distributed and Grid Computing, Jaypee University of Information Technology, Wagnaghat, December 06-08, 2012, INDIA.
 31. Organizing Committee Member, ICIIP 2013-The First IEEE International Conference on Image Information Processing, Jaypee University of Information Technology, Wagnaghat, December 09-11, 2013, INDIA.
 32. IEEE International Conference on Recent Advances and Innovations in

- Engineering (ICRAIE-2014), May 9-11, 2014, Jaipur, India
33. UKSim-AMSS 15th International Conference on Computer Modelling and Simulation, Cambridge University, Emmanuel College, United Kingdom, April 10-12, 2013
 34. UGC Sponcered, "2nd International Conference on innovative Developments in ICT-Today & Tomorrow", DAV College Amritsar, March 2-3, 2012.
 35. 6th International Conference on Advanced Computing and Communication Technologies, Asia Pacific Institute of Information technology SD India, November, 3, 2012.
 36. IUCEE "Artificial Neural Network, Pattern Recognition, Computer Vision and Multimedia Information Retrieval" Indo US Engineering Faculty Leadership Institute 2011, Jaypee University of Information Technology Wagnaghat, Solan, July 04 to July 08, 2011
 37. IUCEE "Teaching Engineering using MATLAB and Simulink" Indo US Engineering Faculty Leadership Institute 2010, Jaypee University of Information Technology Wagnaghat, Solan, July 12 to July 14, 2010
 38. IUCEE "Enterprise Software Engineering" Indo US Engineering Faculty Leadership Institute 2010, Thiagarajar College of Engineering, Madurai, Tamilnadu June 28 to July 2, 2010.
 39. 1st International Conference on Computational Intelligence, Communication Systems and Networks (CICSyN2009), 23-25 July 2009, Indore, India
 40. IEEE International Advance Computing Conference, IACC 2009, 6-7 March 2009, TIET Patiala, India.

**Invited Lectures/
Resource Persons**

1. Keynote Speaker, title "Defending the Defender: Adversarial Learning Based Defending Strategy for Learning Based Securing Methods in CPS", International Conference on Futuristic trends in Network and Communication Technologies FTNCT-2023, 29-07-2023.
2. Invited Lecture in online interdisciplinary refresher course on E resources and ICT in Quality Teaching and Research at UGC-HRDC Jai Narain Vyas University Jodhpur, Rajasthan on 8 Feb 2022
3. Guest Lecture/Invited lecture on Digital Hygiene: Staying Secure in Cyber Space at Central University of HP, on 24th January, 2022.
4. Resource person in 6-day AICTE-ISTE Sponsored Online Induction/Refresher Program on "IoT and Smart Technologies" MIET Jammu, from 13th to 18th of December, 2021.
5. Resource Person in FDP on AICTE raining and Learning Academy On "Artificial Intelligence/Artificial Wisdom- A drive for improving Behavirol and Mental Health Care", organized at CUJ, from 06-09-2021 to 10-09-2021
6. Keynote Speaker, title "IoT: Past, Present and Future", International Conference on Advances in Multi-Disciplinary Sciences and Engineering Research, ICAMSER-2021, Chitkara University Himachal Pradesh July 02-03, 2021
7. Keynote Speaker, title "IoT: Vulnerability Analysis Framework", 4th International Conference on Recent Innovations in Computing, Indo-Hungarian Conference, June 09, 2021.
8. Resource Person in 7 Days faculty Development Programme on ICT Tools in Education, Organized by department of Educational Studies, Central University of Jammu under the aegis of Pandit Madan Mohan Malviya National Mission on Teachers and Teaching title "Cyber Crime: Alarming Issue for Digital World" on

- Cyber Data Security, February 02, 2021.
9. Resource Person in 7 Days faculty Development Programme on ICT Tools in Education, Organized by department of Educational Studies, Central University of Jammu under the aegis of Pandit Madan Mohan Malviya National Mission on Teachers and Teaching title “The Technological Challenge Facing Higher Education Professors: Perceptions of ICT Tools for Developing 21st Century Skills”, Technological Challenges in Higher Education, February 05, 2021.
 10. Invited Talk, IoT, MIET Jammu, through Google Meet on title “Future of IOT, Threats and Vulnerabilities” 06-06-2020.
 11. Resource Person , Role of ICT in Assessment and Evaluation, PMMMNMTT CU Jammu, 5-6 Feb 2020
 12. Resource Person, Design Develop & deliver MOOC, PMMMNMTT CU Jammu, 09 Jan 2020
 13. Keynote Speaker, International Conference on Computing Communication and Cyber Security 12-13Oct 2019
 14. Keynote Speaker, 3rd International Conference on Innovations in Computing 12-13 Dec 2019
 15. Invited Talk on “ Data Structures and Its Applications” , Bhaderwah Campus, University of Jammu, 27-28 March 2019.
 16. Resource Person in Orientation Course of Human Resource Development Centre, University of Jammu, January 8, 2019.
 17. Delivered expert lecture in three days’ workshop on **ICT based learning and Professional Development**, Organized by department of Educational Studies, Central University of Jammu under the aegis of Pandit Madan Mohan Malviya National Mission on Teachers and Teaching held at **Ramisht College of Education, BASHOLI, Distt. Kathua, Jammu** on “Information Communication Technologies” November 14-16, 2017
 18. Delivered expert lecture in 5 days ICT based training programme Organized by department of Educational Studies, Central University of Jammu under the aegis of Pandit Madan Mohan Malviya National Mission on Teachers and Teaching held at GGHSS, Kishtwar, J&K on “ICT and its tools” and “Cyber Security and Threats of Internet and Security” October 24-28, 2017
 19. Delivered an expert lecture in University Institute of Information Technology (UIIT), Himachal Pradesh University, Shimla on “**Preparation for Accreditation – Total Quality Assurance of Engineering Programs**” on July 13, 2015
 20. Delivered an expert lecture in University Institute of Information Technology (UIIT), Himachal Pradesh University, Shimla on “**National Accreditations and Implications**” on July 13, 2015
 21. Delivered an Expert Lecture in Punjab Technical University sponsored Faculty Development Programme on **Software Engineering Practices in Object Oriented Programming** on June 20, 2012 organized by Department of Computer Science and Engineering, Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib from June 18-22, 2012.

Research Projects (Major Grants/ Research Collaboration)

1. DRDO Sponsored Research Project on “Design and Development of Testbed and Vulnerability Analysis Framework for Cyber Physical Systems”, Rs. 994.6193 Lakhs, 2021-23.
2. DRDO Sponsored Research Project on “Development of Vulnerability Analysis Framework and Test Bed for IoT and Embedded Devices”, Rs. 46.322 Lakhs, 2019-21.
3. National Commission for Women Sponsored Research Project on “Cyber Security-Challenges under Cyber Space Specially for Women users”, Rs. 12.19 Lakhs, 2020-21.

Awards and Distinctions

1. Visiting Professor, Jan Wyzykowski University, Polkowice Poland (24-06-2019 to 08-07-2019)
2. Developed Scheme and Full Course with ppts on Introduction to Agroinformatics (IM401) for Leaders Institute, Queensland Australia

Association with Professional Bodies

1. Member IEEE,
2. Member ACM,
3. Member Computer Society India
4. Life Member of ISTE

Patents

Sr No.	App No	Cbr No	Cbr Date	Title	Status
1.	371236-001	206322	22/09/20252	Safety Jacket based on Artificial Intelligence	Under Process
2.	370571-001	205782	09/09/2022	Water Spray Nozzle with protective Single Cover to prevent Foreign Substance in Water Outlet of Nozzles for Automobile	Under Process
3.	202311005237			IOT-PHG: Internet of Things based safety Device for protection against hazardous gases	Under Process

Other

Scopus : <https://www.scopus.com/authid/detail.uri?authorId=57210010055>
Google Scholar : <https://scholar.google.dk/citations?user=8JcvSKOAAAAJ&hl=da>
Orchid ID : <https://orcid.org/0000-0003-2833-2093>