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ACADEMIC QUALIFICATIONS

- **Ph.D in Computer Science & Technology** from *Jawaharlal Nehru University, New Delhi* in January 2014.
- **M.Tech. (Computer Science & Technology)** in January 1999 from *Jawaharlal Nehru University, New Delhi* with a **CGPA of 7.66 (81.6%) on a scale of 9.0.**
- **Master of Computer Applications (MCA)** in 1997 from *Jawaharlal Nehru University, New Delhi* with a **CGPA of 7.11 (75.1%) on a scale of 9.0.**
- **B.Sc. Maths** from *Kanpur University, Kanpur* in 1994 with **67% marks.**

UGC NET

- Cleared **UGC NET Examination** for Lectureship held in **July 2000** in **Computer Science & Applications.**

WORK EXPERIENCE:

Teaching Experience: (21 years)

- *Associate Professor in School of Computer & Systems Sciences, JNU (September 1, 2017 – till date)*
- *Assistant Professor in School of Computer & Systems Sciences, JNU (September 1, 2004 – August 31, 2017)*
- *Lecturer (Computer Science) in Jamia Millia Islamia, New Delhi (July 16, 2002, - August 31, 2004).*
- *Lecturer (Computer Science) in Shri Lal Bahadur Shastri R. S. Vidyapeeth (Deemed University), New Delhi (January 07, 2002 - July 15, 2002).*

Administrative Experience:

- *Worked as **Warden of Mahi/Mandavi Hostel, JNU** from 23/03/2006 to Sept. 2018.*
- *Worked as **Coordinator of remedial classes** in SC&SS, JNU from 2009 to 2019*
- *Working as **Placement Co-ordinator**, in SC&SS, JNU from 2007 to till date.*

AREAS OF INTEREST/SPECIALIZATION:

Wireless Sensor Networks, Vehicular Ad-Hoc Networks, Internet of Things, Cybersecurity, Green Computing, Applied Machine Learning/Deep Learning.

RESEARCH PUBLICATIONS:

Papers published in Journals:

- [1] Manoj Kumar, Upasana Dohare, Sushil Kumar, "Blockchain based Optimized Energy Trading for E-Mobility Using Quantum Reinforcement Learning", in *IEEE Transactions on Vehicular Technology*, doi: 10.1109/TVT.2022.3225524. online- Feb. 07, 2023
- [2] Bhawana, Sushil Kumar, U. Dohare and O. Kaiwartya, "FLAME: Trusted Fire Brigade Service and Insurance Claim System using Blockchain for Enterprises," in *IEEE Transactions on Industrial Informatics*, 2022, doi: 10.1109/TII.2022.3212172.
- [3] Pankaj Kumar Kashyap, Sushil. Kumar, *et al.*, "DECENT: Deep Learning Enabled Green Computation for Edge centric 6G Networks," in *IEEE Transactions on Network and Service Management*, vol. 19, no. 3, pp. 2163-2177, Sept. 2022.
- [4] Pinky Bai, Sushil Kumar *et. al.*, "GDPR Compliant Data Storage and Sharing in Smart Healthcare System: A Blockchain-Based Solution", *Electronics*, 2022; 11(20):3311.
- [5] Bhawana, Sushil Kumar, *et al.*, "BEST—Blockchain-Enabled Secure and Trusted Public Emergency Services for Smart Cities Environment" *Sensors* 22, no. 15: 5733, 2022.

- [6] Pinky Bai, Sushil Kumar et. al. , "Self-Sovereignty Identity Management Model for Smart Healthcare System" *Sensors* 22, no. 13: 4714, 2022
- [7] Kumar, Manoj, Sushil Kumar, et. al., "Green Communication in Internet of Things: A Hybrid Bio-Inspired Intelligent Approach" *Sensors*, vol. 22, no. 10: 3910, pp. 1-17, May 2022
- [8] Vandhana Bashin, Sushil Kumar, P.C. Saxena, "Trust-Aware Distributed and Adaptive Energy Efficient Secure Routing in sensor networks", *Ad Hoc & Sensor Wireless Networks* , 50(1-4): pp. 73-115, July 2021
- [9] Pankaj K. Kashyap, Sushil Kumar et.al., "Towards Precision Agriculture: IoT-enabled Intelligent Irrigation Systems Using Deep Learning Neural Network" in *IEEE Sensor Journal*, vol. 21, no. 16, pp. 17479-17491, Aug.15, 2021
- [10] Ankita Jaiswal, Sushil. Kumar, et.al., " Quantum Learning Enabled Green Communication for Next Generation Wireless Systems", in *IEEE Transactions on Green Communications and Networking* vol. 5, no. 3, pp. 1015-1028, Sept. 2021
- [11] Vinod Kumar. Sushil Kumar, "Grouping and Sponsoring Centric Green Coverage Model for Internet of Things", *Sensors* 2021, 21, 3948.
- [12] Sudhakar, Sushil Kumar, "MCFT-CNN: Malware classification with fine-tune convolution neural networks using traditional and transfer learning in Internet of Things", *Future Generation Computer Systems*, vol. 125, 2021, Pages 334-351.
- [13] Saneh Lata Yadav, R. L. Ujjwal, Sushil Kumar, "Traffic and Energy Aware Optimization for Congestion Control in Next Generation Wireless Sensor Networks", *Journal of Sensors*, vol. 2021, Article ID 5575802, 16 pages, 2021.
- [14] Vandhana Bashin, P.C. Saxena, Sushil Kumar, "Compressing index on distributed data of sensors", in *IEEE Sensor Journal*, vol. 21, no. 10, pp. 12313-12321, 15 May15, 2021
- [15] Rinki Rani, Sushil Kumar, et.al., "Towards Green Computing Oriented Security: A Lightweight Postquantum Signature for IoE", *Sensors*. 2021; 21(5):1883.
- [16] Ankita Jaiswal, Sushil Kumar, et.al., "Green computing in IoT: Time slotted simultaneous wireless information and power transfer", *Computer Communications, Elsevier*, Vol. 168, Feb. 2021, Pages 155-169
- [17] Ankita Jaiswal, Sushil. Kumar, et.al., "Secrecy Rate Maximization in Virtual-MIMO Enabled SWIPT for 5G Centric IoT Applications", in *IEEE Systems Journal*, vol. 15, no. 2, pp. 2810-2821, June 2021
- [18] Kirshna Kumar, Sushil Kumar et. al., "Drone Assisted Flying Ad-Hoc Networks: Mobility and Service Oriented Modeling using Neuro-Fuzzy", *Ad Hoc Networks, Elsevier*, Vol. 106, Sept. 2020, 102242.
- [19] Kirshna Kumar, Sushil Kumar et. at., "Internet of Unmanned Aerial Vehicles: QoS Provisioning in Aerial Ad-Hoc Networks", *Sensors* 2020, 20, 3160.
- [20] Sushil Kumar, Omprakash Kaiwartya, Manisha Rathee et al., "Towards Energy Oriented Optimization for Green Communication in Sensor Enabled IoT Environments", *IEEE Systems Journal*, vol. 14, no. 4, pp. 4663-4673, April 27, 2020
- [21] Manisha Rathee, Sushil Kumar, Amir H. Gandomi et al., "Ant Colony Optimization based Quality of Service Aware Energy Balancing Secure Routing Algorithm for Wireless Sensor Networks", *IEEE Transaction on Engineering Management*, vol. 68, no. 1, pp. 170-182, 2019
- [22] Sunil Kumar, Karan Singh, Sushil Kumar, et al., "Delimited Anti Jammer Scheme for Internet of Vehicle: Machine Learning based Security Approach", *IEEE Access*, vol. 7, pp. 113311-113323, 2019.
- [23] Sushil Kumar, Vipin Kumar, O. Kaiwartya et al., "Towards Green Communication in Wireless Sensor Network: GA enabled Distributed Zone Approach", *Ad Hoc Networks, Elsevier*, vol. 93, 101903 May 2019 pp.1-17
- [24] Rinki Rani, Sushil Kumar and Upasana Dohare, "Trust Evaluation for Light Weight Security in Sensor Enabled Internet of Things: Game Theory Oriented Approach", *IEEE Internet of Things Journal*, vol. 6, no. 5, pp. 8421-8432, Oct. 2019.
- [25] Ram, M.; Kumar, S.; Kumar, V.; Sikandar, A.; Kharel, R. Enabling Green Wireless Sensor Networks: Energy Efficient T-MAC Using Markov Chain Based Optimization. *Electronics* 2019, 8(5), 534.
- [26] Pankaj Kumar Kashyap, Sushil Kumar et al. "Green Computing in Sensors-Enabled Internet of Things: Neuro Fuzzy Logic-Based Load Balancing". *Electronics* 2019, vol. 8 (4), 384.
- [27] Sushil Kumar, Upasana Dohare et al. "Cybersecurity Measures for Geocasting in Vehicular Cyber Physical System Environments," *IEEE Internet of Things Journal*, vol. 6, issue 4, pp. 5916 – 5926, Aug. 2019.

- [28] Jitender Kumar, Sushil Kumar et al., "Enabling Green Computing in Cloud Environments: Network Virtualization Approach Towards 5G Support", *Transactions on Emerging Telecommunications Technologies*, Wiley, vol. 29, no. 11, Nov. 2018.
- [29] Reena Kasana, Sushil Kumar et al., "Fuzzy-Based Channel Selection for Location Oriented Services in Multichannel VCPS Environments," *IEEE Internet of Things Journal*, vol. 5, no. 6, pp. 4642-4651, Dec. 2018.
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- [39] Fasee Ullah, Abdul Hanan Abdullah, Omprakash Kaiwartya, Sushil Kumar and Marina Md. Arshad, "Medium Access Control (MAC) for Wireless Body Area Network (WBAN): Superframe structure, multiple access technique, taxonomy, and challenges" , *Hum. Cent. Comput. Inf. Sci.* (Dec. 2017) 7: 34.
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- [44] Omprakash Kaiwartya and Sushil Kumar "Guaranteed Geocast Routing (GGR) in Vehicular Adhoc Networks for Highways Environment", *Wireless Personal Communications*, Springer, August 2015, Volume 83, Issue 4, pp 2657-2682
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- [50] Ram Shringar Raw, D. K. Lobiyal, Sanjoy Das, Sushil Kumar, "Analytical Evaluation of Directional-Location Aided Routing Protocol for VANETs", *Wireless Personal Communications*, Springer, June 2015, vol. 82, no. 3, pp. 1877-1891
- [51] Mahendra Ram, Sushil Kumar, "Green Computing for Industrial Wireless Sensor Networks: Energy oriented Cross Layer Modelling", *Recent Patents on Engineering*, Volume 16, Number 3, 2022, pp. 97-109, 1 May 2022. (Scopus Index).
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- [53] Parveen, Rishipal Singh & Sushil Kumar, "IoV based intelligent vehicle tracker using FoG computing with supervised machine learning techniques", *Journal of Discrete Mathematical Sciences and Cryptography*, vol. 24, no. 5, pp. 1393-1413, 2 Sept., 2021 (Scopus Index).
- [54] Mukesh Kumar, Sushil Kumar et al., "Q-Learning Enabled Green Communication in Internet of Things", *Journal of Information Technology Management*, vol. 14, pp. 103-117, Jan. 2022 (Scopus Index).
- [55] Arvind Kumar, Deepti, Sushil Kumar, "Fuzzy based energy optimized routing for lifetime maximization in mobile ad hoc networks", *Journal of Discrete Mathematical Sciences and Cryptography*, vol. 24, no. 5, pp. 1439-1455, 2 Sept., 2021. (Scopus Index).
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- [58] Manisha Rathee and Sushil Kumar, Kumar Dilip, "Quantum-Inspired Ant-based Energy Balanced Routing in Wireless Sensor Networks", *Recent Advances in Computer Science and Communications* (2020) 13: 1 (Scopus Index).
- [59] Sudhakar, Kumar, S. An emerging threat Fileless malware: a survey and research challenges. *Cybersecurity*, 3, 1 (2020).
- [60] Pankaj Kumar Kashyap, Sushil Kumar, "Genetic Fuzzy Based Load Balanced protocol for WSNs", *International Journal of Electrical and Computer Engineering (IJECE)*, vol. 9, No.2, pp. 1168-1183, April 2019 (Scopus Index).
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- [62] Vandhana Bashin, Sushil Kymar et. al, "Security Architectures in Wireless Sensor Network", *International Journal of Information Technology*, Springer <https://doi.org/10.1007/s41870-018-0103-6> / Jan 31, 2018. (Scopus Index).
- [63] Omprakash Kaiwartya and Sushil Kumar "Cache Agent based Geocasting (CAG) in VANETs", *International Journal of Information and Communication Technology*, Inderscience, 7(6):562-584 · September 2015. (SCOPUS)
- [64] Sushil Kumar and D. K. Lobiyal, "Sensing Coverage Prediction for Wireless Sensor Networks in Shadowed and Multipath Environment," *The Scientific World Journal*, vol. 2013, Article ID 565419, 11 pages, Sept- 2013. (SCOPUS)
- [65] Sushil Kumar and D K Lobiyal, Probabilistic Sensing Coverage for Wireless Sensor Networks, *IERI Communications letters*, Vol. 1, No.1, Jan, 2012.
- [66] Meenakshi Diwakar And Sushil Kumar, "An Energy Efficient Level Based Clustering Routing Protocol for Wireless Sensor Networks", *International Journal of Advanced Smart Sensor Network Systems (IJASSN)*, Vol 2, No.2, April 2012, pp-55-65
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- [68] Ajay Sikandar and Sushil Kumar, "Energy Efficient Clustering in heterogeneous Wireless Sensor Network using Degree of Connectivity", International Journal of Computer Networks & Communications (IJNC), Vol.7, No.2, March 2015, pp. 19-31.
- [69] Arvind Kumar and Sushil Kumar "Energy optimization of greedy packet forwarding approach in Mobile Ad hoc with random waypoint mobility", International Journal of Innovations & Advancement in Computer Science, Vol. 6, Issue 3, March 2017, pp. 54-59.
- [70] Arvind Kumar and Sushil Kumar, "Energy Balance Packet Forwarding for Lifetime Maximization in Mobile Ad Hoc Networks", International Journal of Applied Engineering Research (IJAER), Volume 12, Number 15 (2017) pp. 5374-5382 (SCOPUS)

Book Chapter:

- [1] Parveen, Singh, R., Sushil Kumar, (2022). Crash Detection-Based Fleet Tracking System Using VANETs. In: Chakravarthy, V.V.S.S.S., Flores-Fuentes, W., Bhateja, V., Biswal, B. (eds) Advances in Micro-Electronics, Embedded Systems and IoT. Lecture Notes in Electrical Engineering, vol 838. Springer, Singapore, 23 April 2022, ISBN- 978-981-16-8550-7
- [2] Shazmeen Shamsi, Mohd. M. Haque, Sushil Kumar, Jawed Ahmed, Mohammad Sufian Badar, Blockchain: Concept and Emergence, Advances in Computing Communications and Informatics Blockchain Applications for Secure IoT Frameworks: Technologies Shaping the Future, Bentham Science, (2021) 1: 85. pp. 85-107, ISBN- 978-1-68108-863-1
- [3] Omprakash Kaiwartya, Pawan Kumar Tiwari, Sushil Kumar "Dynamic Vehicle Routing Solution in the Framework of Nature Inspired Algorithms", Handbook of Research on Designing and Implementing Global Supply Chain Management, IGI Global Publication, Dec, 2015, ISBN: 9781466697201.
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Research Papers published in Conferences:

- [1] Manish, Upasana Dohare, Sushil Kumar, "A survey of vehicle trajectory prediction based deep learning models", ICAES, Tribhuvan University, Nepal, 9-10, Sept. 2022
- [2] Ankit Manderna, Sushil Kumar, Upasana Dohare, "Machine Learning-based Fuzzy Attack Detection in Intelligent Vehicular System", in Proceedings of the Sixth International Conference on Trends in Electronics and Informatics ICOEI 2022, April 28, 2022, pp. 805-810
- [3] Pinky Bai, Sushil Kumar and Upasana Dohare, "Smart Contract Assisted Public Key Infrastructure for Internet of Things", 3rd International Conference on Emerging Technologies in Data Mining and Information Security, 23rd - 25th February, 2022

- [4] Bhawana and Sushil Kumar, "Permission Blockchain Network based Central Bank Digital Currency," *2021 IEEE 4th International Conference on Computing, Power and Communication Technologies (GUCON)*, Sept. 2021, pp. 1-6.
- [5] Bhawana and S. Kumar, "A Review on Cyber-Physical Systems based on Blockchain: Possibilities and Challenges," *2021 IEEE 6th International Conference on Computing, Communication and Automation (ICCCA)*, Dec. 2021, pp. 691-696.
- [6] Manoj Kumar, Pankaj Kumar Kashyap, Sushil Kumar, (2021). Fuzzy Q-Reinforcement Learning-Based Energy Optimization in IoT Network. In: Udgata, S.K., Sethi, S., Srirama, S.N. (eds) Intelligent Systems. Lecture Notes in Networks and Systems, vol 185. Springer, Singapore. 20 April, 2021
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- [13] Ankita Jaiswal, Sushil Kumar, P. K. Kashyap, "TBM Based Charger Deployment Technique in Internet of Things", 2019, The International Conference on Networks and Cryptology (NetCrypt), JNU, New Delhi, India, 2019.
- [14] M. N. Pavan, S. Kumar and G. Nayak, "Interference Aware Resource Allocation (IARA) in Cognitive Radio Networks," *2018 IEEE 13th International Conference on Industrial and Information Systems (ICIIS)*, Rupnagar, India, 2018, pp. 202-206.
- [15] Vinod Kumar, Sushil Kumar, "Coverage Preserving Scheduling for Life Span Maximization in Wireless Sensor Network based Internet of Things", International Conference on Communication and Computing Systems (ICCCS-18), December 1 – 2, 2018, Gurgaon
- [16] Reena Kasana, Sushil Kumar, "Reliable Geographic Routing Protocol for Vehicular Ad-hoc Networks under Shadowing and Multipath Environments," in Proceedings of International Conference on Information and Communications Technology 6-8 March, 2018 (ICOIACT 2018), IEEE, Indonesia
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- [23] Durga Prasada Dora, Sushil Kumar, Mita Joshi, "Impact of traffic signal on connectivity in intersection based connectivity aware geocast routing (IB-CAGR) in VANETs", *Signal Processing and Integrated Networks (SPIN)*, 2016 3rd International Conference on, 11-12 Feb. 2016, pp. 4-8.
- [24] Manisha Rathee, Sushil Kumar, "Quantum inspired genetic algorithm for energy efficient clustering in wireless sensor networks," *2016 IEEE 1st International Conference on Power Electronics, Intelligent Control and Energy Systems (ICPEICES)*, 2016, pp. 1-6, doi: 10.1109/ICPEICES.2016.7853351.", ICPEICES 2016, 4th-6th July 2016 New Delhi.
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- [45] Sushil Kumar and D K Lobiyal, Linear Order Sensor Network Deployment for Coverage Analysis Based on TBM Theory, IEEE, International Advance Computing conference, 22-23 Feb. 2013 pp. 404 - 407
- [46] Sushil Kumar and D K Lobiyal, Connectivity Enhancement in Randomly Distributed Wireless Sensor Network Using Cooperative Cluster Transmission, 2013 IEEE International Mutli-Conference on Automation, Computing, Communication, Control and Compressed Sensing (iMac4s), 22-23 March 2013 pp. 607 - 612

CONFERENCE / WORKSHOP ORGANIZED, CHAIR/ATTENDED:

Session Chaired:

1. ICCCS 2019, International conference on communication and computing systems, 1-2, Dec, 2018
2. ICPR 2017 Springer International conference on pattern recognition, 22, December, 2017.
3. COMTECH-2016, National Conference on Emerging Computer Technologies, AKG, Ghaziabad, 1-2 April, 2016.
4. IndiaCom-2016, Bharati Vidyapeeth's , Institute of Computer Applications and Management, New Delhi

Organised:

1. Online National Instructional Workshop on CRYPTOLOGY (NIWC-2020), SC&SS, JNU, New Delhi, from 22nd - 26th July 2020
2. 1st International conference on Networks and Cryptology (NETCRYPT-2019),14-16 June 2019 at SC&SS, JNU, New Delhi.
3. Emerging challenge of cyber crime in India, 09-10 Oct. 2017.
4. PyDelhi-2016, Workshop on Python, SC&SS, JNU, New Delhi, March 05, 2016.
5. “International Conference on Signal, Networks, computing, and Systems (ICSNCS-2016 Springer), SC&SS, JNU, New Delhi, 25-27 Feb 2016.

Attended/presented:

1. IndiaCom-2016, Bharati Vidyapeeth's , Institute of Computer Applications and Management, New Delhi
2. IEEE International conference on intelligent computing, instrumentation and control technolages, July 6-7, 2017.
3. WRFER, new delhi, 02 july, 2017
4. NSD poster presentation, JNU,new delhi, 28, Feb. 2015
5. UGC Sponsered Orientation Programme , Jamia Millia Islamia, 6th April to 7th May, 2014 (four weeks)
6. Refresher Course in Computer Science, J. N. U., 10th Nov to 5th Dec, 2008 (four weeks)
7. Refresher Course in Computer Science & Information Technology, J. N. U., 22 July to 16 Aug., 2013 (four weeks)
8. Short term course on Network & Cyber Security, SC&SS, 27/06/16 to 01/07/16 (one week).
9. One week workshop on Fuzzy and Rough Sets for Knowledge Discovery, Sept. 5-9, 2016
10. “IEEE International Advance Computing conference (IACC-2013)”, AKG Engineering College, Ghaziabad, UP.
11. “IEEE International Mutli-Conference on Automation, Computing, Communication, Control and Compressed Sensing (iMac4s-2013)”,Palai, Kerala .
12. “Emerging Computing Technologies in Modern Era-2014”, SSJ P.G college, Jaipur.

Invited talk

1. Networking Communication Systems, International Workshop on Future Mobility and Applications, NTU, UK, Nov. 22, 2022.
2. Research Issues in Cybersecurity, JNU, ATAL FDP on cybersecurity, Dec.07, 2021,
3. Research Solution for Cybersecurity, JNU, ATAL FDP on cybersecurity, 2020, Nov. 24, 2020.
4. Classical Cryptography, ATAL Faculty Development Programme (Online) on Cyber Crime & Security, Department of Information Technology, College of Technology, GBPUAT, Pantnagar, India, Nov. 24, 2020.
5. Classical Cryptography, AICTE Sponsored Faculty Development Programme (Online) on Cyber Crime & Security, Department of Information Technology, College of Technology, GBPUAT, Pantnagar, India, October 5-17,2020.

6. Classical Techniques in Cryptography, Online National Instructional Workshop on CRYPTOLOGY (NIWC-2020), SC&SS, JNU, New Delhi, from 22nd - 26th, July 2020
7. Trust Evaluation for Lightweight security in Internet of Things using ns-3, Workshop on “Security” , ICARS, New Delhi & Sharda University, Greater Noida, from 06th July, 2020 to 10th July, 2020
8. Wireless Network Simulation using ns-3, Workshop on “Internet of Things”, ICARS, New Delhi, from 22nd June, 2020 to 26th June, 2020
9. Energy Oriented Optimization in Sensor- Enabled Internet of Things using NS-2, Workshop on Research Tools, ICARS, New Delhi , June 29, 2020- July 03, 2020
10. Working on NS-2 and NS-3” in Workshop on Research Tools, ICARS, New Delhi held from June 29, 2020- July 03, 2020
11. IoT Security & Health Applications, JNU, ATAL FDP 2020, June 02, 2020.
12. Cybersecurity Research and Solutions, JNU, ATAL FDP 2020, May 29, 2020.
13. Network Simulation and Data Security, FDP on “Network Simulation and Data Security”, CCSIT, TMU, Moradabad, UP, August 07, 2018.
14. Mobile and Opportunistic Networks, Workshop on “Mobile and Opportunistic Networks”, Ambedkar Institute of Technology, Delhi, August 17, 2017
15. Network Simulator-2, RMS college of engineering & Technology, Bareilly, July 12, 2016.
16. Network Lab/Demo, HRDC, JNU, Sept. 04, 2015.

RESEARCH PROJECTS UNDERTAKEN:

- Title of Research Project(s): *Development of Protocols and Algorithms for Green Wireless Sensor Networks*, Date of Commencement: May 13, 2015, Completion: March 31, 2019, Total Grants : 23 Lakhs

RESEARCH GUIDANCE:

Ph.D Supervised-

1. 1. Bhawana, “Modeling Emerging Internet of Things Applications Using Blockchain”, Dec. 2022 (**submitted**)
2. Pinky Bai, “Blockchain Enabled Security and Privacy for IoT Centric Smart Healthcare System”, Dec. 2022 (**submitted**)
3. Manoj Kumar, “Energy Optimization in Internet of Things”, Dec. 2022 (**submitted**)
4. Rinki Rani, “Lightweight Security Models for Green Computing in Internet of Things”, Sept. 22, 2022
5. Mukesh Kumar, “Data Mining Enabled Models for Efficient Data Transmission in Internet of Things”, Sept. 23, 2022
6. Sudhkar, “Cybersecurity Threat Detection using Machine Learning and Deep Learning Techniques”, July 1, 2022
7. Intyaz Alam, “Modeling of Internet of Vehicles”, Feb. 2022
8. Ankita Jaiswal, “Energy Harvesting in Internet of Things”, Feb. 2022
9. Mahendra Ram, Modeling of Energy Efficient MAC Protocols in Wireless Sensor Networks, Feb. 2022
10. Kirshna Kumar, Routing in Internet of Things, July, 02, 2021
11. Pankaj Kumar Kashyap, Load Balancing in Wireless Sensor Networks, August 24, 2020.
12. Vinod Kumar, Energy Efficient Coverage in Sensor Enabled Internet of Things, 26 July, 2019
13. Reena Kasana, Geographic Routing in Vehicular Ad-hoc Networks, March, 2019
14. Manish Rathee, Energy balancing in wireless sensor networks, Sept. 2018.
15. Priyanka Rathee, Performance modeling of medium access control for vehicular ad-hoc networks, July 2018.
16. Aanchal, Lifetime maximization of wireless sensor networks, December, 2017
17. Vandana Bhasin, Design of secure and reliable data distribution in wireless sensor networks, December, 2017.
18. Vipin Kumar, Position-based routing protocols in wireless sensor networks, Dec, 2017
19. Arvind Kumar, Optimization of Energy Consumption in Mobile Ad hoc Networks, Dec, 2017
20. Ajay Sikandar, Energy Efficient Transmission in Wireless Sensor Networks, July, 2015
21. Omprakash Kaiwartya, Goecast Routing Protocols in Vehicular Adhoc Networks, July, 2015

M.TECH. Supervised-

1. Vibha Bharilya, “Deep Learning and IoT Enabled Model for Plant Disease Detection”, July 14, 2022
2. Apoorva Srivastva, Machine Learning enabled Intrusion Detection Model in IoT, Jan. 2022
3. Prashant Kumar, An Effective Machine Learning based Technique for Traffic Classification in IoT Networks, Jan, 2022

4. Kumar Anukool, Homomorphic Encryption for Machine Learning Models, Dec 2021
5. Ankit Mandearna, Data Dissimination in Vehicular Cyber Physical Systems, July 2018
6. Manoj Kumar, Localization Systems for wireless sensor networks, July 2018
7. Ritesh Yaduwanshi, Vehicular cyber physical system, July 2017.
8. Bhawana. Messaging queue for internet of things, July 2017
9. Pinky Bai, Energy efficient communication protocol, at network layer for internet of things, July 2017
10. Sameeksha Tandon ,Traffic Forwarding in Virtual Local Networks, July 2016
11. Intyaz Alam, Performance Analysis of T-MAC Protocol in Wireless Sensor Networks, July 2016
12. Ankita Jaiswal, Energy Neutrality in Randomly Deployed Energy Harvesting Wireless Sensor Networks, July 2016
13. Krishna Kumar, *Routing Protocols in Internet of Things, July 2015.*
14. Vijay Prakash Bijlwan, *Enhancing Communication Channel Model for Wireless Body Area Networks, July 2015*
15. Purevsuren Altangerel, *Performance Analysis of Deployment Methods for Wireless Sensor Networks, July 2015*
16. Durga Prasad Dora, *Geocast Routing in VANETs, July 2014.*
17. Sujit Kumar, *Data Aggregation in Wireless Sensor Networks, July 2014.*
18. Panjak Kumar, *Maximizing Lifetime of Wireless Sensor Networks, July 2014*
19. Reena Kasana, Geocast Routing in Vehicular Adhoc Networks, July 2013.
20. Aarti Singh, Performance Analysis of Localization Techniques in Wireless Sensor Networks, July 2013.
21. Anchal Khatri, *Cooperation Enforcement in Mobile Adhoc Networks using Reputation System, July 2013.*
22. Omprakash Kaiwartya, *Geocast Routing Protocols for Vehicular Adhoc Networks, July 2012*
23. Gyani Umesh Kumar, *Cooperation Enforcement Methods in Adhoc Networks, July 2012.*
24. Vipin Kumar, *Position based Routing Protocols in Wireless Sensor Networks, July 2012.*
25. Mahendra Ram, *Energy Optimization in Wireless Sensor Networks, July 2012.*
26. Vinesh Teotia, 2012.
27. Arun Kumar, *Integrating Wormhole Attack Defence Mechanism with Reactive based Routing Protocols, July 2012.*
28. Ajay Sikandar, *Performance Analysis of SMAC Protocol in Shadowed Environments, July 2010*
29. Manish Kumar, *Security in Wireless Sensor Networks, July 2011*
30. Sujata, *Energy Efficient MAC Protocols for Wireless Sensor Networks, July 2009*
31. Meenakhi Diwakar, *Hierarchical Routing Protocol in Wireless Sensor Networks, July 2009.*
32. Ansuman Bose, *Performance Enhancement of IP Storages over the Wireless Networks, July, 2007*
33. Rakesh Kumar, *Performance Algorithms of Routing Algorithms in Wireless Sensor Networks, July 2007*

Member of board/committee:

- Member of board of study in Department of Computer Science, Himachal Pradesh University, Shimla, from Feb. 16, 2018 to Feb. 15, 2020.

Professional Membership:

- Senior member, IEEE

(SUSHIL KUMAR)