<u>Curriculum Vitae</u>

Sakshi Kaushal
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<u>QUALIFICATION:</u>

- Ph.D (Computer Sc. & Engg.) from **Thapar Institute of Engineering and Technology**, Patiala, India in May, 2009.
- M.Tech (Computer Sc. & Engg.) with **Distinction** from **Guru Jambheshwar University**, Hisar, India in Dec., 2002.
- B.Tech (Computer Sc. & Engg.) from **S.B.S.C.E.T,** Ferozepur, affiliated to Punjab Technical University, Jalandhar, India in May, 2001.

<u>EXPERIENCE:</u> (Total Experience – 21+years)

- Presently working as Professor in Computer Sc. & Engg. In University Institute of Engg. & Technology, Panjab University, Chandigarh, India

<u>SUBJECTS TAUGHT:</u>

Advance Computer Networks, Cloud Computing, Mobile Computing, Information Retrieval, Network Security, Data Structures, System Programming, Research Methodologies, C/C++, Web Technologies

<u>RESEARCH INTERESTS:</u>

Next Generation Telecommunication Networks, Social Network Analysis, Security, Cloud Computing, UAVs, Theory and Applications of Machine learning/Deep Learning and IoT Centric Approaches

PROJECTS/CONSULTANCY WORK:

Sr. No.	Title	Funds / Agency	Duration
1	A Study of Impact of Free and Open-Source Software (FOSS) (Co-PI)	Rs. 5.50 Lacs Technical Education Quality Improvement Programme, MHRD, GoI	3 Years (July 2013 – June 2016)
2	Developing Android Based Mobile Application for Network Complaints (PI)	Bharti Airtel Ltd, Chandigarh	6 months (Oct, 2014-Feb., 2015)
3	Development of Unified IP Based Communication Platform for Data, Voice and Video Services (PI)	Rs. 60 Lacs Ministry of Electronics and IT, New Delhi	4 Years (Aug, 2016-March 2020)
4	Visvesvaraya PhD Scheme (Nodal Officer/PI)	Rs. 192 Lacs Digital India Corp, MeitY, New Delhi	5 Years (Sep, 2015-Aug, 2020)
5	Development of 4G/5G based UAV Augmented Intelligent Monitoring and Surveillance System (Co-PI)	Rs. 182.7 Lacs Ministry of Electronics and IT, New Delhi	3.5 Years (July, 2019-Dec, 2022)
6	Capacity Building and Research Entrepreneurship Centre in Artificial Intelligence, Big Data and IoT for SC/ST (Co-PI)	Rs. 72.94 Lacs Ministry of Electronics and IT, New Delhi	3 Years (March, 2020-March, 2023)
7	Multi-Model Framework for Monitoring Active Fire Locations (AFL) and Precision in Allied Agricultural Activities using Communication Technologies (Co-PI)	Rs. 81.25 Lacs Ministry of Electronics and IT, New Delhi	4 Years (March, 2020-March, 2024)
8	India-EU ICT Standards Collaboration Project Funding for International Summit (Co-PI)	Rs. 1.5 Lacs	March 2020- April 2021
9	Study and Documentation of Research Standards for Train Collision Avoidance System (Co-PI)	Rs. 5.46 Lacs Electrowave Electronics Pvt Ltd	April 2022-March 2023
10	Scheme for Promoting Interest, Creativity & Ethics among Students (SPICES) (Co-PI)	Rs. 1 Lacs AICTE	May 2022
11	Funds for Improvement of S&T Infrastructure (FIST) (PI)	Rs. 94 Lacs DST	March 2022- March 2027
12	Visvesvaraya PhD Scheme (Phase 2) (Nodal Officer/PI)	Rs. 72.61 Lacs Digital India Corp, MeitY, New Delhi	5 Years (Sep, 2022-Aug, 2027)
13	Visvesvaraya PhD Scheme (Phase 2)	Rs 1,81,54,000/-	5 Years

	(Nodal Officer/PI)	Digital India Corp, MeitY, New Delhi	(Aug, 2023-Aug, 2028)
14	Setting of 5G Use-Case Lab (Nodal Officer/PI)	Rs. 71,25,000/- Department of Telecommunications, Govt of India	5 Years (Oct, 2023 – 2028)
15	Enabling 5G-Enabled Drones for GPS-Free Navigation Inside Tunnels (PI)	Technology Innovation Hub on Autonomous Navigation and Data Acquisition Systems (UAVs, ROVs, etc.) at IIT Hyderabad by Department of Science & Technology, Govt of India	2 Years (Nov., 2023- 2025)

EXTENSION ACTIVITIES AND RESEARCH INTERACTION

- Chaired 23+ sessions in various International and national conferences like WMSCI-2005 (Orlando, USA), IEEE RAECS 2014 (Chandigarh),Springer ICT4SD-2015 (Ahmadabad, Gujarat), IEEE RAECS 2015 (Chandigarh), ITNAC 2018(Sydney, Australia), Jaipur, IEEE CITISIA 2020, IEEE Women in Engineering 2020, 2021, 2022, etc.

- Invited talks (34+) at various institutes/Conferences/Faculty Development programmes organized by TERI- The Energy and resources Institute, NITTTR Chandigarh, Refresher Courses organized by Academic Staff College, Panjab University, NSS Camp - Panjab University, GNE Ludhiana, NIT Jalandhar, DY Patil University Navi Mumbai, IEEE Women in Engineering (WiE) at Bangalore, Goa and IIT Hyderabad, ICLIE Dubai, ITNAC Sydney, Department of Statistics, PU, etc.

- Attended 33+ training programmes at institutes like ISB Mohali, Deloitte US-India, Hyderabad, Infosys Chandigarh, IIT Delhi,IIT Chennai, IIT Bombay, IIM Bangalore, IIIT Hyderabad, HRDC-PU, etc.

- Organized as Coordinator/Co-Coordinator/Team member major programmes/events like:
  - CyberAstra - A Series of Exploring Cyber Security starting from September 27, 2022 and November 12, 2022
  - Gender Sensitive Training Skills: Fading the Boundaries, August 5-10, 2022
  - Staff Development Workshops on Maintenance and Troubleshooting your Computer Hardware and Software and Maintaining and Securing Network Near You on August 18, 2022 and August 22, 2022, *respectively*.
  - Amateur Radio Communication: Role in Disaster Management& Procedure for HAM and Neurocognitive Computing &Its Applications on Feb. 17, 2022 and April 18, 2022, *respectively*.

- o Expert Lectures on Digital India and Innovation & Research in Convergent Communication Technologies including 5G and Creativity and Design Thinking on May 5, 2021 and June 4, 2021, *respectively.*
- o Sat Paul Mittal Memorial Lectures under Bharti Chair at UIET, Panjab University in 2021, 2019, 2018
- o Women in Engineering Track in 14th, 13th and 10[th]IEEE ANTS held at IIIT Delhi from 14-17 Dec. 2020, Goa in Dec 2019 and Bangalore, India from 6-9 Nov., 2016, *respectively*.
- o Special Session on Telecommunications and AI: Use-Cases in Healthcare and Agriculture in IEEE CITISIA 2020, New South Wales
- o Goa in Dec 2019 and Bangalore, India from 6-9 Nov., 2016, respectively.
- o Gender Equality and Women's Rights on July 20, 2020.
- o Degree Award Ceremony, UIET in 2018 and 2013
- o M2M Workshop in Collaboration with CDoT at PU Chandigarh in 2018
- o Chandigarh Science Congress, 2011
- o QEEE programme initiated by IIT Madras and MHRD (Started since Dec., 2013)
- o NPTEL workshop and Industry Sessions/Panel Discussions
- o Faculty workshop on "Pedagogy for Effective use of ICT in Engineering Education" in Blended Online MooCs model in collaboration with IIT Bombay in June 2014.
- o MOOCs on "Building Cloud Based Applications" conducted by IIT Kanpur and IIT Ropar for post-graduate students in 2014-15.

MEMBERSHIP AND OTHERS

- 3GPP, TSDSI IM, Working Group (WG) Member in TEC Security by design Principles in M2M device manufacturing National Trust Center for certification of M2M devices; Consultative Committee for adoption of oneM2M Release 3 specifications and applications, NWG-20 corresponding to ITU-T Study Group-20 on IoT and Smart Cities & Communities.
- Member IEEE, Life Member Computer Society of India, Indian Society for Technical Education and Chandigarh Region Innovation & Knowledge Cluster (CRIKC), Subject Expert in AICTE and NBA
- Board of Studies in CSE/IT of Panjab University, Central University HP
- Faculty Incharge, QEEE Programme initiated by IIT Madras and MHRD
- Member of various departmental committees like Board of Control, Academic/ Administrative/ Technical Committee/ Brand Promotion/Magazine, RDC in CSE, etc.
- Coordinator, Computer Science and Engineering, UIET, Panjab University, Chandigarh (2021- 2024).
- Associate Director, Internal Quality Assurance Cell, Panjab University, Chandigarh

PUBLICATIONS

Journals: 53   **Book Chapters: 30**   **Conference Proceedings (Last 4 years): 19**
Technical Reports: 01   **Products: 02**   **Patent: 01 (Granted), 01 (Published)**
i-10 index: 36   **h-index: 21**

Referred International Journals:

1. Kushal Kanwar, Sakshi Kaushal, Harish Kumar, Gaurav Gupta, Manju Khari, An efficient method for node ranking in complex networks by hybrid neighbourhood coreness, *Computing,* https://doi.org/10.1007/s00607-023-01218-1 Springer **SCI Indexed (Impact Factor 3.7)**

2. *Parneet Kaur, Harish Kumar, Sakshi Kaushal, Technology-assisted Language Learning Adaptive Systems: A comprehensive review, International Journal of Cognitive Computing in Engineering,* https://doi.org/10.1016/j.ijcce.2023.09.002, Kaei Publishers, **Elsevier (Scopus)**

3. Monika Rani, Sakshi Kaushal, GeoClust: Feature Engineering based Framework for Location-Sensitive Disaster Event Detection using AHP-TOPSIS, *Expert Systems with Applications*, vol. 210, 2022 **ElsevierSCI Indexed (Impact Factor 8.6)**

4. Tanu Goyal, Sakshi Kaushal, An Intelligent Energy Efficient Handover Mechanism with Adaptive Discontinuous Reception in Next Generation Telecommunication Networks, *Expert Systems with Applications*, vol. 209, 2022 **Elsevier SCI Indexed (Impact Factor 8.6)**

5. Monika Rani, Sakshi Kaushal, A novel framework for multiclass supervised classification of location-sensitive events,*Multimedia Tools and Applications*, 2022 **Springer SCI Indexed (Impact Factor 2.5)**

6. Raman K Goyal, Jaskirat Singh, Nidhi Kalra, Anshu Parashar, Gagan Singla, and Sakshi KaushalObtaining Crisp Priorities for Triangular and Trapezoidal Fuzzy Judgments,*Computer Systems Science And Engineering*, 41 (1), pp. 157-170, 2022 **SCI Indexed (Impact Factor 1.486)**

7. Kushal Kanwar, Sakshi Kaushal, Harish Kumar, et al.,BCDCN: a new edge centrality measure to identify and rank critical edges pertaining to SIR diffusion in complex networks,*Social Network Analysis and Mining*, 12(49), 2022 **Springer (Scopus)**

8. Simrat Kaur, Sarbjeet Singh, Sakshi Kaushal, Abusive Content Detection in Online User-Generated Data: A survey, *Procedia Computer Science*, Science Direct, vol. 189, pg. 274–281, 2021 **(Scopus)**

9. N Mahajan, AChauhan, H Kumar, S Kaushal, A Deep Learning Approach to Detection and Mitigation of Distributed Denial of Service Attacks in High Availability Intelligent Transport Systems, *Mobile Networks and Applications*, 2022 **Springer SCI Indexed (Impact Factor 3.0)**

10. A Sharma, H Kumar, K Mittal, S Kaushal, M Kaushal, D Gupta, A Narula, IoT and deep learning-inspired multi-model framework for monitoring Active Fire Locations in

Agricultural Activities, *Computers & Electrical Engineering*, vol 93, 2021 **Elsevier SCI Indexed (Impact Factor 4.15)**

11. R K Goyal, J Singh, N K, A Prashar, G Singla, S Kaushal, Obtaining Crisp Priorities for Triangular and Trapezoidal Fuzzy Judgments, *Computer Systems Science & EngineeringDOI:10.32604/csse.2022.018962* (Accepted) **SCI Indexed (Impact Factor 4.39)**

12. Parneet Kaur, Harish Kumar, Sakshi Kaushal, Affective state and learning environment-based analysis of students' performance in online assessment, *International Journal of Cognitive Computing in Engineering*, vol. 2, pg. 12-20,2020 Kaei Publishers, **Elsevier (Scopus)**

13. Raj Kumari, Sakshi Kaushal, Constraints Based Heuristic Approach for Task Offloading in Mobile Cloud Computing, *Information Technology in Industry*, vol. 8, no. 1, 2020 **ESCI.**

14. Sahil Kansal, Harish Kumar, Sakshi Kaushal, A request allocation model for processing data in federated cloud computing, *The Electronic Library*, 2020 (https://doi.org/10.1108/EL-01-2019-0005) **Emerald Publishers**, **SSCI Indexed (Impact Factor 1.67)**

15. Kushal Kanwar, Sakshi Kaushal, Harish Kumar, A hybrid node ranking technique for finding influential nodes in complex social networks, *Library Hi Tech*, 2019 **Emerald Publishers**, **SSCI Indexed (Impact Factor 1.62)**

16. Tanu Goyal, Sakshi Kaushal, Handover optimization scheme for LTE-Advance networks based on AHP-TOPSIS and Q-learning, *Computer Communications*, vol. 133, pp. 67-76, 2019, **Elsevier SCI Indexed (Impact Factor 5.04)**

17. Kushal Kanwar, Sakshi Kaushal, Harish Kumar, Complex network based comparative analysis of Delhi Metro network and its extension,*Physica A: Statistical Mechanics and its Applications*, Vol. 526, 2019 **Elsevier SCI Indexed (Impact Factor 3.77)**

18. Nishant Gupta, Nitish Mahajan, Sakshi Kaushal, Naresh Kumar, Harish Kumar, Arun Kumar Sangaiah, Predictive Model for Hardware Calibration to Transmit Real-time Applications in VoIP Networks, *Concurrency and Computation Practice and Experience*, vol. 33, no. 4, e5190, 2021, **Wiley SCI Indexed (Impact Factor 1.81)**

19. Amita Chauhan, Nitish Mahajan, Harish Kumar, Sakshi Kaushal, Analysis of DDoS Attacks in Heterogeneous VoIP Networks: A Survey, International Journal of Innovative Technology and Exploring Engineering, vol.8, no. 6S3, pp. 242-246, 2019 **(Scopus)**

20. A. Ahlawat, Kabir, K. Sharma, K. Pathak, S. Singh, S. Kaushal, H. Kumar, Akashdeep, Smart Surveillance Using on Cloud Machine Learning and Internet Controlled UAVs, Advances in Mathematics: Scientific Journal, vol. 9, no.6, pp. 3789–3794, 2020**(Scopus)**

21. Ramita Jindal, Harish Kumar, Sakshi Kaushal, Nighttime Vehicle Lamp Detection and Tracking Using Kalman Filter, Journal of Scientific Research and Review, vol. 7, no. 2, pp 76-89, 2019

22. Kumari, R., Kaushal, S., Chilamkurti, N, Energy Conscious Multi-Site Computation Offloading for Mobile Cloud Computing, *Soft Computing*,vol. 22, pp. 6751–6764, 2018 **Springer SCI Indexed (Impact Factor 3.73)**

23. Sahil Kansal, Harish Kumar, Sakshi Kaushal, Arun Kumar Sangaiah, Genetic algorithm-based cost minimization pricing model for on-demand IaaS cloud service, *The Journal of Supercomputing*, vol. 76, no. 3, pp. 1536-1561, 2018 **Springer SCI Indexed (Impact Factor 2.55)**

24. Puneet Jai Kaur, Sakshi Kaushal, A Fuzzy Approach for Estimating Quality of Aspect Oriented Systems, *International Journal of Parallel Programming*,pp. 1-20, 2018 **Springer SCI Indexed (Impact Factor 1.44)**

25. Sakshi Kaushal, Harish Kumar, Sarbjeet Singh, Shubhani Aggarwal, Jasleen Kaur, Sundarapandian Vaidyanathan, Modelling and simulation of an analytical approach to handle real-time traffic in VoIP network, *Int. J. Simulation and Process Modelling*, vol. 13, no. 1, pp. 35-42, 2018 Inderscience **(Scopus)**

26. Gurjot Kaur, Jasleen Kaur, Shubhani Aggarwal, Chinu Singla, Nitish Mahajan, Sakshi Kaushal, Arun Kumar Sangaiah, An optimized hardware calibration technique for transmission of real-time applications in VoIP network, *Multimedia Tools and Applications*, vol. 78, no. 5, pp. 5537-5570, 2017 **Springer SCI Indexed (Impact Factor 2.5)**

27. Tanu Goyal, Sakshi Kaushal, An Intelligent Scheduling Scheme for Real-time Traffic Management using Cooperative Game Theory and AHP-TOPSIS methods for Next Generation Telecommunication Systems, *Expert Systems with Applications*, vol. 86, 125-134, 2017 **Elsevier SCI Indexed (Impact Factor 8.6)**

28. Puneet Jai Kaur, Sakshi Kaushal, Arun Kumar Sangaiah, Francesco Piccialli, A Framework for Assessing Reusability Using Package Cohesion Measure in Aspect Oriented Systems, *International Journal of Parallel Programming*, pp. 1-22, vol 46, no. 3, pp. 543-564, 2018Springer **SCI Indexed (Impact Factor 1.44)**

29. Raman Kumar Goyal, Sakshi Kaushal, Arun Kumar Sangaiah, The Utility Based Non-Linear Fuzzy AHP Optimization Model for Network Selection in Heterogeneous Wireless Networks, *Applied Soft Computing*, vol. 67, pp. 800-811 2017 **Elsevier SCI Indexed (Impact Factor 8.2)**

30. Raman Kumar Goyal, Sakshi Kaushal, Deriving Crisp and Consistent Priorities for fuzzy AHP-based Multicriteria Systems using Non-linear Constrained Optimization, *Fuzzy Optimization and Decision Making*, vol. 17, no. 2, pp. 195-209, 2017 **Springer SCI Indexed (Impact Factor 5.27)**

31. A Hybrid Multi-Objective Particle Swarm Optimization Algorithm for Scientific Workflow Scheduling in IaaS Cloud, *Parallel Computing,* vol. 6(C), 2017 **Elsevier SCI Indexed (Impact Factor 0.98)**

32. Simrat Kaur, Sarbjeet Singh, Sakshi Kaushal, Arun Kumar Sangaiah, Analysis of Quality Metrics for Community Detection in Social Networks using Genetic Algorithm, *Journal of*

Neural Network World, DOI: 10.14311/NNW.2016.26.036, 2016, pp 625-641, 2017 **SCI-E(Impact Factor 1.5)**

33. Meghna Chaudhary, Harish Kumar, Sakshi Kaushal, The Case Analysis on Sentiment Based Ranking of Nodes in Social Media Space", *Multimedia Tools and Applications*, vol. 77, no. 4, pp. 4217-4236, 2017 Springer **SCI Indexed (Impact Factor 2.5)**

34. Chinu Singla, Sakshi Kaushal, An Efficient Game Theoretic Based Computation Offloading Framework for Network Optimization in Mobile Cloud IoT Systems, International *Journal of Advanced Intelligence Paradigms,*vol.9, no. 3, 2017 Inderscience **(Scopus Indexed)**

35. Tanu Goyal, Sakshi Kaushal, Arun Kumar Sangaiah, Fuzzy Logic Based Optimized Algorithm for Mobility Robustness and Load-Balancing in LTE/4G networks, *International Journal of Networking and Virtual Organisations*, vol. 18, no. 4, 2018, pp. 323-337 Inderscience **(Scopus Indexed)**

36. Raman Kumar Goyal, Sakshi Kaushal, A Constrained Non-Linear Optimization model for Fuzzy Pairwise Comparison Matrices using Teaching Learning Based Optimization, *Applied Intelligence,* vol. 45, no. 3 , pp. 652-661, 2016 Springer **(SCI Indexed, Impact Factor- 5.01)**

37. Raman Kumar Goyal, Sakshi Kaushal, Design of Transport Layer Bandwidth Aggregation Scheme for Wireless Applications, *International Journal of Systems, Control and Communications*, vol.7, no. 3, pp. 255-271, 2016 **(Scopus Indexed)**

38. Raman Kumar Goyal, Sakshi Kaushal, Sundarapandian Vaidyanathan, Fuzzy AHP for Control of Data Transmission by Network Selection in Heterogeneous Wireless Networks, *International Journal of Control Theory and Applications*, vol. 9, no.1, pp. 133-140, 2016 **(Scopus Indexed)**

39. Raman Kumar Goyal, Sakshi Kaushal, Modelling and Simulation of Predictive Handover Control Mechanisms for Fast Moving Mobile Nodes in Wireless Networks, *International Journal of Simulation and Process Modelling*, vol. 11, no. 2, pp. 88-96, 2016 **(Scopus Indexed)**

40. Raman Kumar Goyal, Sakshi Kaushal, A Velocity Based Handover Decision Technique Using TOPSIS Method, *International Journal of Applied Engineering Research*, vol. 10, no. 10, 25379-25388, 2015 **(Scopus Indexed)**

41. Amandeep Verma, Sakshi Kaushal, Cost-Time Efficient Scheduling Plan for Executing Workflows in the Cloud, *Journal of Grid Computing*, pp 495-506, 2015 Springer **(SCI Indexed, Impact Factor-4.6)**

42. Amandeep Verma, Sakshi Kaushal, Cost Minimized PSO based Workflow Scheduling Plan for Cloud Computing, *International Journal of Information Technology and Computer Science*, vol. 7, no. 8, pp. 37-43, 2015.

43. Gaurav Garg, Sakshi Kaushal, Akashdeep Sharma, Behavioural Study of Reactive Protocols with Wormhole Attack in Mobile ADHOC Networks, *Journal of Emerging Technologies in Web Intelligence*, vol. 4, no.6, 445-455, 2014.

44. Amandeep Verma, Sakshi Kaushal, Deadline Constraint Heuristic based Genetic Algorithm for Workflow Scheduling in Cloud, *International Journal of Grid and Utility Computing*, vol. 5, no.2, 96 - 106, 2014 **(Scopus Indexed)**

45. Raman Kumar Goyal, Sakshi Kaushal, A survey of mSCTP for transport layer mobility management, Journal of Advances in Information Technology, vol. 4, no.1, pp. 20-27, 2013.

46. Amandeep Verma, Sakshi Kaushal, Budget constrained priority based genetic algorithm for workflow scheduling in cloud, IET Digital Library, pp., 216-222, 2013 **(Scopus Indexed)**

47. Max Bhatia, Sakshi Kaushal, A Hybrid Technique to Identify Peer-to-Peer Internet Traffic, International Journal of Computer Applications, vol. 74, no. 13, 2013.

48. Max Bhatia, Sakshi Kaushal, Online statistical internet traffic classification approaches, International Journal of Advanced Research in Computer Science and Software Engineering, vol. 2,no. 3, 2012

49. Sakshi Kaushal, R. K. Sharma, Performance Analysis of Adaptive Buffer Management Mechanism using Autoregressive based MPEG-4 encoded Video Traffic Model", *International Journal of Simulation Modeling Practice and Theory*, vol. 17, no. 10, pp. 1642-1662, 2009. **Elsevier SCI Indexed (Impact Factor- 4.19)**

50. Sakshi Kaushal, R. K. Sharma, Modelling and Analysis of Sustainable cell rate using MPEG Video traffic in ATM Networks, *Journal of Systemics, Cybernetics and Informatics* published by International Institute of Informatics and Systemics, Florida, U.S.A, vol. 4, no. 2, pp. 6-9, 2006 **(Scopus)**

51. Sakshi Kaushal, R. K. Sharma, On a Recursive Algorithm for Analysis of Loss Probabilities in High Speed Networks under Partial Buffer Sharing Scheme, *International Journal of Systemics, Cybernetics and Informatics*, vol. 1, no. 2, pp. 14-18, 2007.

52. Sakshi Kaushal, R. K. Sharma, Modeling and Analysis of Adaptive Buffer Sharing Scheme for Consecutive Packet Loss Reduction in Broadband Networks, *International Journal of Computer Systems Science and Engineering*, published by World Academy of Science, Engineering and Technology, vol. 4, no. 1, pp. 8-15, 2007.

53. Sakshi Kaushal, R. K. Sharma, Modeling and Simulation of Adaptive Buffer Management Mechanism using Nested Autoregressive Process based MPEG encoded Traffic Model, *International Journal of Modelling and Simulation*, vol. 30, no.2, 2010 **Taylor and Francis (Scopus)**

Book Chapters

1   Nitish Mahajan, Amita Chauhan, Harish Kumar, Sakshi Kaushal, Sarbjeet Singh, Drone Watch: A Novel Dataset for Violent Action Recognition from Aerial Videos, Smart Innovation, Systems and Technologies book series (SIST, volume 364), pp 445–459, 2023

2   Bhavna Sethi, Harish Kumar, Sakshi Kaushal, Issues and Challenges of Blockchain in

Healthcare, Intelligent Data Analytics, IoT, and Blockchain, Auerbach Publications, pp. 145-154, 2024

3   Monika, Harish Kumar, Sakshi Kaushal, Varinder Garg, Remote Photoplethysmography: Digital Disruption in Health Vital Acquisition, Explainable Machine Learning for Multimedia Based Healthcare Applications (Springer International Publishing) pp. 215-233, 2023

4   Nitish Mahajan, Amita Chauhan, Harish Kumar, Sakshi Kaushal, Telecommunication Interventions and Opportunities in Education, Health, and Agriculture, Learning from the COVID-19 Pandemic: Implications on Education, Environment, and Lifestyle (CRC Press), 2023

5.   Monika, Harish Kumar, Sakshi Kaushal, Varinder Garg, Remote Photoplethysmography: Digital Disruption in Health Vital Acquisition, Explainable Machine Learning for Multimedia Based Healthcare Applications, Springer International Publishing, 2023

6.   Shubham Sharma, Sakshi Kaushal, Shubham Gupta, Harish Kumar, A Blockchain-based solution for Electronic Medical Records system in Healthcare, Advanced Informatics for Computing Research. ICAICR 2021. Communications in Computer and Information Science, vol 1575. Springer https://doi.org/10.1007/978-3-031-09469-9_20

7.   Gupta, Anchal, Monika Rani, and Sakshi Kaushal "Disaster Event Detection from Text: A Survey." In Computational Intelligence in Data Mining, pp. 281-293. Springer, Singapore, 2022.

8.   Monika Rani, Anchal Gupta, Sakshi Kaushal, Hierarchical Deep Learning Network based Framework for Disaster Event Detection, Springer Modern Approaches in Machine Learning & Cognitive Science: A Walkthrough, pp. 195-199, 2022.

9.   Kushal Kanwar, Sakshi Kaushal, Harish Kumar, An AHP-TOPSIS Based Framework for the Selection of Node Ranking Techniques in Complex Networks Communications, Computer and Information Science, Springer, vol. 1241, pp 527-542, 2020

10. Khushboo Singla, Rudra Arora, Sakshi Kaushal, An Approach Towards IoT-Based Healthcare Management System, Advances in Intelligent Systems and Computing, Springer, vol. 1262, pp. 345-356, 2020

11. Sahil Kansal, Harish Kumar and Sakshi Kaushal, Cooperative Game Theory-Based Request Distribution Model in Federated Cloud Environment, Advances in Intelligent Systems and Computing, Springer, vol. 1089, pp. 216-226, 2020

12. Amita Chauhan, Nitish Mahajan, Harish Kumar, Sakshi Kaushal, Framework for SIP-Based VoIP System with High Availability and Failover Capabilities: A Qualitative and Quantitative Analysis, ICT Systems and Sustainability, Springer, pp. 273-286, 2020.

13. Puneet Jai Kaur, Sakshi Kaushal, Using Clustering for Package Cohesion Measurement in Aspect-Oriented Systems, Information and Communication Technology for Intelligent Systems. Smart Innovation, Systems and Technologies, Springer, vol. 106, pp 263-274, 2019.

14. Priya Raina, Sakshi Kaushal, A Framework for Security Management in Cloud Based on Quantum Cryptography, Advances in Intelligent Systems and Computing, Springer, vol. 904, pp. 295-306, 2019.

15. Rakshita Bansal, Monika Rani, Harish Kumar, Sakshi Kaushal, Temporal Information Retrieval and Its Application: A Survey, Advances in Intelligent Systems and Computing,

Springer, vol 906, pp. 251-262, 2019.

16. Chinu Singla, Gurjot Kaur, Jasleen Kaur, Nitish Mahajan, Shubhani Aggarwal, Sakshi Kaushal, An Intelligent Hardware Calibration Scheme for Real Time VoIP Applications, Lecture Notes in Networks and Systems, Springer, vol. 18, pp. 211-219, 2018.

17. Chinu Singla, Nitish Mahajan, Sakshi Kaushal, Amandeep Verma, Arun Kumar Sangaiah, Modelling and Analysis of Multi-objective Service Selection Scheme in IoT-Cloud Environment, Lecture Notes on Data Engineering and Communications Technologies, Springer, vol. 14, pp. 63-77, 2018.

18. Riya Goyal, Tanu Goyal, Sakshi Kaushal, Harish Kumar, Fuzzy AHP Based Technique for Handover Optimization in Heterogeneous Network, Lecture Notes in Networks and Systems, Springer, vol 46. Springer, Singapore, 2018.

19. Shubhani Aggarwal, Nitish Mahajan, Sakshi Kaushal, Harish Kumar, Load Balancing and Clustering Scheme for Real-Time VoIP Applications, Advances in Computer Communication and Computational Sciences, Springer, vol. 760, pp. 451-461, 2018.

20. Puneet Jai Kaur, Sakshi Kaushal, Effect of Package Cohesion on Evaluation of Reusability of Aspect Oriented Systems: A Fuzzy Approach, Communications in Computer and Information Science book series (CCIS), Springer, vol. 955, pp. 639-650, 2018.

21. Chinu Singla, Sakshi Kaushal, Amandeep Verma, Harish Kumar, A Hybrid Computational Intelligence Decision Making Model for Multimedia Cloud Based Applications, Computational Intelligence for Multimedia Big Data on the Cloud with Engineering Applications, Science Direct Academic Press, pp. 147-157, 2018.

22. Amandeep Verma, Sakshi Kaushal, Arun Kumar Sangaiah, Computational Intelligence Based Heuristic Approach for Maximizing Energy Efficiency in Internet of Things, Intelligent Decision Support Systems for Sustainable Computing, Springer, vol. 705, pp. 53-76, 2017.

23. Kushal Kanwar, Harish Kumar, Sakshi Kaushal, A Metric to Compare Vulnerability of the Graphs of Different Sizes, Electronic Notes in Discrete Mathematics, Elsevier, vol. 63, pp. 525-533, 2017.

24. Himanshu Sachdeva, Sakshi Kaushal, Amandeep Verma, Enhanced Strategy to Minimize Makespan in Cloud Computing to Accelerate the performance, Advances in Intelligent Systems and Computing, Springer, pp. 179-191, 2016.

25. Raman Kumar Goyal, Sakshi Kaushal, Network Selection using AHP for Fast Moving Vehicles in Heterogeneous Networks, Advances in Intelligent Systems and Computing, Springer, pp. 235-245, 2016.

26. Karanbir Singh, Sakshi Kaushal, Energy Efficient Resource Provisioning Through Power Stability Algorithm in Cloud Computing, Advances in Intelligent Systems and Computing, Springer International Publishing, pp. 255-263, 2016.

27. Chinu Singla, Sakshi Kaushal, Offloading for Application Optimization Using Mobile Cloud Computing, Advances in Intelligent Systems and Computing, Springer, pp. 477-484 , 2016.

28. Raj Kumari, Sakshi Kaushal, Roopali, Application Offloading Using Data Aggregation in Mobile Cloud Computing Environment, Business and Economics, Springer, pp 17-29, 2016.

29. Parul Datta, Sakshi Kaushal, Fuzzy logic-based handover in 3GPP LTE network, Advances in Intelligent Systems and Computing, Springer, pp. 213-222, 2015.

30 Tanu Goyal, Sakshi Kaushal, A Study of Energy Efficient Techniques for Handover Management in LTE-A Networks, Wireless Communications and Mobile Computing,

Springer, pp. 33-44, 2015.

International Conferences (Last 5 Years)

1. Deepali Sharma, Harish Kumar, Sakshi Kaushal, Shalini Gainder, Arogi Chatbot: A platform for pre-screening gynecology and obstetrics patients, ACM Fifteenth International Conference on Contemporary Computing (IC3), August 2023, pp.300-306, 2023, https://doi.org/10.1145/3607947.3608008.

2. N. Mahajan, S. Kaushal and H. Kumar, IMS enabled Centralized UAV control system with seamless connectivity over mobile network, IEEE International Conference on Innovative Data Communication Technologies and Application (ICIDCA), Uttarakhand, India, 2023, pp. 636-641, doi: 10.1109/ICIDCA56705.2023.10099619.

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5. Puneet Kapoor, Sakshi Kaushal, harish Kumar, A Review on Architecture and Communication Protocols for Electric Vehicle Charging Systems, ACM International Conference on Information management & Machine Intelligence, December 22-24, 2022

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10. Kushal Kanwar, Sakshi Kaushal and Harish Kumar, An AHP-TOPSIS based framework for the selection of node ranking techniques in complex networks, *Springer 2nd International*

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11. Sakshi Kaushal, Sarbjeet Singh and Jyoti Goyal, An approach towards IoT based Disaster Management System, *5th International Conference on Engineering Research & Innovations(EQUINOX-2020),*March 19-202020, Mumbai.

12. Riya Goyal, Tanu Goyal, Sakshi Kaushal, An Efficient Handover Management Technique For Improving QoS in Next Generation Networks, *13thIEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS),* December 16-19 2019, BITS Pilani, KK Birla Goa Campus, India.

13. Parneet Kaur, Harish Kumar, Sakshi Kaushal, Competitive Examinations in India: e-Assessment Based Case Study," *IEEE 10thInternational Conference on Technology for Education (T4E)*, pp. 162-165, December 9- 11 2019, Goa, India.

14. Parneet Kaur, Harish Kumar, Sakshi Kaushal, Conceptual Framework of an Intelligent Tutor for Teaching English Grammar to High School Students, *ACM International Conference on Education Technology and Computers*, October 28-31, 2019 Amsterdam, Netherlands.

15. Kushal Kanwar, Sakshi Kaushal, Harish Kumar, BC_{DCN}: An efficient and accurate edge centrality measure, *Conference on Complex Systems,* Sept. 27-29 2019, NTU Singapore.

16. Rakshita Bansal, Monika Rani, Harish Kumar, Sakshi Kaushal, Temporal Event Detection Using Supervised Machine Learning Based Algorithm, *Innovations in Bio-Inspired Computing and Applications (IBICA 2018),* Springer Advances in Intelligent Systems and Computing, vol. 939, pp. 257-268, 2018 Kochi, India.

17. M. Singh, S. Singh, N. Seen, S. Kaushal, H. Kumar, Comparison of learning techniques for prediction of customer churn in telecommunication, *28th International Telecommunication Networks and Applications Conference (ITNAC)*, pp. 1-5, Nov. 20-23 2018 Sydney, New South Wales, Australia.

18. R. Goyal, N. Mahajan, T. Goyal, S. Kaushal, N. Gupta, H. Kumar, Exploration of 5G Technology for Cellular Communication: A Survey, *IEEE Second International Conference on Intelligent Computing and Control Systems (ICICCS)*, pp. 330-334, June 24-25 2018, Madurai, India.

19. Raj Kumari, Sakshi Kaushal, Energy efficient approach for application execution in mobile cloud IoT environment, *ACM Proceedings of the Second International Conference on Internet of things, Data and Cloud Computing*, pp. 1–8, March, Cambridge, United Kingdom, 2017.

Technology Developed/Products:

1. Unified IP Based Communication Platform, namely, 'Nah-Sanchar', for Voice, Video, Data, Messaging and Chat Services
2. 'e-Notice Board' which can be remotely controlled from any computing device over the Internet.
3. 4G based UAV Augmented Intelligent Monitoring and Surveillance System

4. Multi-Model Framework for Monitoring Active Fire Locations (AFL) and Precision in allied Agricultural Activities using Communication Technologies

Patents:
- 'A System for Detection and Mitigation of Security Attacks in High Availability SIP-Based Communication' published on December 06, 2019 in Indian Patent Registry (**Granted** vide Patent No., 505306, Application No.201911048091 A)
- 'Framework for Monitoring Active Fire Locations and Precision in Allied Agricultural Activities' **(Pubished)**

Technical Report:

Harish Kumar, Sakshi Kaushal, Parneet Kaur and Kamal Wadhera, "Outcomes of Online Assessment– an Inclusive Analytical Study", in collaboration with TCYonline.com, 2019

Research Students:

PhD Students: Awarded: 09

SN	Name	Funding Agency	Enrollment Year/Thesis Status	Topic
1	Amandeep Verma	Salary (In-Service)	2011/ Awarded (2016)	Scheduling and Optimization of Workflows in Cloud Computing Environment
2	Raman Kumar Goyal	TEQIP-II	2010/Awarded (2018)	Design of Transport Layer Mobility Management Technique for Smooth Handover in IP-Based Networks
3	Puneet Jai Kaur	Salary (In-Service)	2011/ Awarded (2018)	Design and Development of Package Level Quality Metrics for Aspect Oriented Software Systems
4	Sahil Kansal	Rajiv Gandhi National Fellowship	2012/ Awarded (2019)	Optimal Pricing Framework for Cloud Computing Service Model
5	Nueafun Pimwong	Govt. of Thailand	2010/Submitted	Improving Quality of Service through Buffer Optimization in VoIP Network
6	Raj Kumari	Salary (In-Service)	2013/Awarded (2022)	Energy Efficient Dynamic Computational Offloading in Mobile Cloud Computing
7	Tanu Goyal	CSIR	2015/ Awarded (2021)	Energy Efficient Handover Mechanism Based on Adaptive DRX in LTE-A Networks
8	Monika Rani	Salary (In-Service)	2014/Awarded (2023)	Spatio-Temporal Framework for Web Information Retrieval
9	Parneet Kaur	UGC BSR Fellowship	2015/ Awarded (2023)	Cognitive Skills Based Online Learning and Assessment Framework to Improve

				Educational Outcomes
10	Kushal Kanwar	Visvesvaraya Fellowship	2015/ Awarded (2021)	A Framework for Contagion Spread in Complex Networks
11	Simrat Kaur	Salary (In-Service)	2016/ Thesis Submitted	Abusive Content Detection and Classification System for Online User-Generated Data
12	Nitish Mahajan	MeiTY Project Fellow	2017/ Thesis Writing	Development of Unified Communication System with Data Analytics for Next Generation Networks
13	Amita Chauhan	MeitY Project Fellow	2021/Synopsis Approved	Intelligent Computation Offloading for UAV-Enabled Mobile Edge Computing in Next Generation Networks
14	Puneet Kapoor	Project Fellow	2022/ Synopsis Approved	Design of Link Prediction Technique for Complex Networks
15	Paridhi Naithani	Project Fellow	2022/ Synopsis Approved	Development of Vision Guided Navigation Technique for Autonomous Unmanned Aerial Vehicles
16	Jaskiranjit Kaur	Visvesvaraya Research Fellow	2022/Enrolled	-

ME Students: Thesis Completed: 20, In-Progress: 01

SN	Name	Degree Award Year	Topic
1	Astha Modgil	2013	Analysis of Rate-Based Congestion Control Using Multi-Path Routing in MANETs
2	Bhupinder Kaur	2013	QoS and Energy Based Evaluation of Routing Protocols in WSN
3	Gaurav Garg	2013	Behavioural Study of Reactive Protocols with Wormhole Attack in MANETs
4	Karanbir Singh	2014	Energy Efficient Resource Provisioning in Cloud
5	Parul Datta	2014	Fuzzy Logic Based Handover Management in LTE Network
6	Akanksha	2015	Particle Swarm Optimization Based Resource Scheduling Technique in Cloud for Wireless Sensor Networks
7	Priya	2016	Securing Cloud Servers using Quantam Key Distribution Protocol
8	Chinu Singla	2016	An Efficient Framework for Computation Offloading in Mobile Cloud Computing
9	Ramita Jindal	2017	Nighttime Vehicle Lamp Detection and Tracking
10	Subhani Aggarwal	2017	Load Balancing and Clustering Scheme for Real-Time VoIP Applications

11	Gurjot Kaur	2017	Modeling and Analysis of hardware Calibration Mechanisms for Different Applications in Unified IP based Communication Systems
12	Rakshita	2018	A Supervised Machine Learning Technique for Temporary Event Detection
13	Riya	2018	An Optimized Handover Management Technique in LTE Networks
14	Amita	2019	Detection and Mitigation of DDoS Attacks in High Availability SIP-Based VoIP Communication Networks
15	ShubhamGupta	2021	Achieving Self Sovereign Identity in Education System using Hyperledger Indy
16	Shubham Sharma	2021	A Blockchain-Based Framework for Electronic Medical Records System in Healthcare
17	Angad Ravikaran Singh	2022	A DDoS Attack Detection and Classification Technique for Internet of Things with Insights to Attack Surfaces and Security Vulnerabilities
18	Deepali Sharma	2022	Arogi Chatbot: A Platform for Pre-Screening of Gynecology and Obstetrics Patients
19	Pareena	2023	Decentralized Group Authentication Using Physically Unclonable Functions for M2M Communication
20	Shrey Dhiman	2023	Exploring the Synergy of Mobile Edge Computing and Blockchain Technology For Task Optimization and Efficient Resource Allocation
21	Kartik	2023	