



Dr. RAJIV KUMAR

Professor and Head
Dept. of Electronics and Communication Engineering,
Jaypee University of Information Technology, India

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RESEARCH INTERESTS

Network Reliability, Resilience, Service Level Agreement (SLA), QoS Routing, Service Reliability, Cyber-Physical Systems, Networked Control Systems, Wireless Sensor Networks, Internet of Things (IoT).

EDUCATION

- 1. Ph.D.(2009)**, National Institute of Technology, Kurukshetra
Area: Reliability and Resilience of Computer Communication Network
Thesis Title: A Conceptual Framework for the Continuity of Mission-Critical Network Services.
- 2. M.Tech.(2001)**, National Institute of Technology, Kurukshetra,
Area: Control Systems (dissertation work on network reliability)
Dissertation Title: Performance Indexes of Flow Networks
- 3. B.Tech.(1994)**, G.B. Pant University of Agriculture & Technology, Pant Nagar.

TEACHING EXPERIENCE

Total Teaching Experience: 23+ Years

1. Professor, Department of Electronics & Communication Engineering, Jaypee University of Information Technology, Solan, (H.P), April 2022 – till date
2. Associate Professor, Department of Electronics & Communication Engineering, Jaypee University of Information Technology, Solan, (H.P), Oct. 2016 – April 2022.
3. Assistant Professor (senior grade), Department of Electronics & Communication Engineering, Jaypee University of Information Technology, Solan, (H.P), Nov. 2009 – Sept. 2016.
4. Senior Lecturer, Department of Electronics & Communication Engineering, Jaypee University of Information Technology, Solan, (H.P), Jan. 2005 – Oct. 2009.
5. Assistant Professor, Department of Electronics & Communication Engineering, Galgotias College of Engineering and Technology, Gr. Noida, Nov. 2003-Dec. 2004.
6. Assistant Professor, M.M. Engineering College, Mullana, Ambala (Presently M.M. University, Sept 2003-Nov. 2003).
7. Lecturer, M.M. Engineering College, Mullana, Ambala (Presently M.M. University), Aug. 1998-Aug 2003.
8. Lecturer (Ad-hoc), Regional Engineering College, Kurukshetra (Presently NIT Kurukshetra), Feb. 98 – June 98.

DATE OF BIRTH July 01, 1973

FUNDED PROJECTS, AWARDS AND GRANTS

- Project Title: Development of graph-theoretic models and decision support methods on choosing a profession based on actor-network analysis of digital footprints of users on social networks, Funding agency: Department of Science and Technology (DST), Govt. of India, New Delhi(In collaboration with Russian Science Foundation), Amount Rupees 50 Lakhs. Duration: Three Years (Under Review).
- Project Title: Reliability Modeling and Optimized Planning of Risk-based Resilient Networks.Funding agency: Department of Science and Technology (DST), Govt. of India, New Delhi(In collaboration with Ministry of Science,Poland), Amount Rs. 18.08 Lakhs. Duration: 2016 -2019.
- Virtual Lab Nodal Coordinator at University Level since year 2016, this project is sponsored by Ministry of Human Resource Development(MHRD)'s National Mission on Education through Information and Communication Technology (NMEICT).
- Technology Incubation and Technology Development Cell, or Project Grant by Himachal Pradesh Government under Himachal Chief Minister Startup scheme, during 2015-2017.
- Executive Council Member for The Institution of Electronics and Telecommunication Engineers (IETE), Shimla Center.
- External member of research committee at Dept of Electronics and Communication Engineering, Thapar Institute of Engineering and Technology, Patiala, Punjab.
- Make efforts for the MoU between Jaypee University of Information & Technology, Waknaghat Solan, Himachal Pradesh and Atal Bihari Vajpayee Govt. Institute of Engineering & Technology, Pragatinagar Shimla, Himachal Pradesh.
- Invited Dr. Veena B. Mendiratta; Bell Labs, Naperville, Illinois,USA at Jaypee University of Information technology,Solan, India as Fulbright Expert during 2012-13.
- Project Grant awarded in June 2012 by Indian Institute of Technology, Bombay under the National Mission on Education through Information and Communication Technology (NMEICT), MHRD Project.

PUBLICATIONS

Best Seven Journal (SCI/SCIE):

1. A. Sharma, Piotr Cholda, **Rajiv Kumar**, Gaurav Dhiman (2021). Risk-aware optimized quickest path computing technique for critical routing services. *Computers and Electrical Engineering*, 95 (6), 107436-107436, DOI: <https://doi.org/10.1016/j.compeleceng.2021.107436>, SCIE&SCOPUS, Web of Science, **IF: 3.818**
2. Geetanjali ,Ashutosh Sharma, Rajiv Kumar, Farhan Ahmad, Razi Iqbal. (2020). A trust management scheme to secure mobile information centric networks. *Computer Communications*, 151 (1 February 2020), 66-75, DOI: 10.1016/j.comcom.2019.12.024, *SCIE and SCOPUS Indexed*, **IF: 2.816**
3. A. Sharma and R. **Kumar**, "Computation of the Reliable and Quickest Data Path for Healthcare Services by Using Service-Level Agreements and Energy Constraints," *Arabian Journal for Science and Engineering*, pp. 1-18, 2019.<https://doi.org/10.1007/s13369-019-03836-4>(**IF 1.711**)
4. A. Sharma and R. **Kumar**, "Service-Level Agreement—Energy Cooperative Quickest Ambulance Routing for Critical Healthcare Services," *Arabian Journal for Science and Engineering*, vol. 44, Issue 44, pp. 3831–38488, 2019.<https://doi.org/10.1007/s13369-018-3687-z>(**IF 1.711**)
5. A. Sharma and R. **Kumar**, "Service level agreement and energy cooperative cyber physical system for quickest healthcare services," *Journal of Intelligent & Fuzzy Systems*, pp. 1-13.<https://doi.org/10.3233/JIFS-169968>(**IF 1.851**)

6. A. Sharma and R. **Kumar**, "A Constrained Framework for Context-Aware Remote E-healthcare (CARE) Services," *Transactions on Emerging Telecommunications Technologies*, 2019. <https://doi.org/10.1002/ett.3649> (IF **1.594**)
7. A. Sharma, **Kumar** R, Talib MWA, Srivastava S, Iqbal R. Network modelling and computation of quickest path for service-level agreements using bi-objective optimization. *International Journal of Distributed Sensor Networks*. October 2019. <https://doi.org/10.1177/1550147719881116> (IF **1.151**)

Journal(Scopus,SCI, SCIE) :

1. A. Sharma, Piotr Cholda, Rajiv Kumar, Gaurav Dhiman (2021). Risk-aware optimized quickest path computing technique for critical routing services. *Computers and Electrical Engineering*, 95 (6), 107436-107436, DOI: <https://doi.org/10.1016/j.compeleceng.2021.107436>, SCIE&SCOPUS, Web of Science, IF: 3.818
2. Hemant K. Gianey, Mumtaz Ali, Varadarajan Vijayakumar, Ashutosh Sharma, Rajiv Kumar (2021). Low Cost and Centimeter-level Global Positioning System Accuracy Using Real-Time Kinematic Library and Real-time Kinematic GPSA. *Recent Advances in Computer Science and Communications*, 14 (2), 360-367, DOI: [10.2174/2213275912666190328201322](https://doi.org/10.2174/2213275912666190328201322), SCOPUS.
3. Ratish Kumar, Rajiv Kumar, MJ Nigam (2021). An Improved Lag-Time Compensation Technique in Distributed Networked Control System based on Smith Predictor. *Informatica*, 45 (5), 605-611, DOI:10.31449/inf.v45i5.3551, SCOPUS.
4. Dinesh Kumar, Rajiv Kumar, Neeru Sharma (2021). A Parallel cross-connection recovery scheme for dual link failure in elastic optical networks. *Journal of Optical Communications*, (), - DOI: <https://doi.org/10.1515/joc-2020-0252>, SCOPUS.
5. Ratish Kumar, Rajiv Kumar, Madhav Ji Nigam (2021). Performance Accretion in Delay Compensation of Networked Control System using Markov Approach based Randomness Estimation in Smith Predictor. *International Journal of System Dynamics Applications (IJSDA)*, 11 (3), -, Web of Science.
6. Rajiv Kumar, Pradeep Kumar Singh, Ashutosh Sharma (2021). B Smart Technologies in Engineering Applications of Cyber Physical System in Healthcare: Sensing, Imaging, Computing and Networking. *Recent Advances in Computer Science and Communications*, 14 (1), 225-226, DOI: 10.2174/266625581401201223125653, SCOPUS
7. Dinesh Kumar, Rajiv Kumar, Neeru Sharma (2020). A Proactive Link Based Fast Recovery Strategy for Survival Elastic Optical Networks. *International Journal of Engineering and Advanced Technology*, 9 (3), 4018-4022, DOI: DOI:10.35940/ijeat.c6459.029320, SCOPUS
8. Poongodi M., A Sharma, V Vijayakumar, V Bhardwaj, AP Sharma, R Iqbal, Rajiv Kumar (2020). Prediction of the price of Ethereum blockchain cryptocurrency in an industrial finance system. *Computers and Electrical Engineering*, 81 (January 2020): DOI: <https://doi.org/10.1016/j.compeleceng.2019.106527>, SCIE&SCOPUS, Web of Science, IF: 3.818
9. Dinesh Kumar, Rajiv Kumar, Neeru Sharma (2020). Proactive fast connection recovery scheme for a failure in elastic optical networks. *International Journal on Emerging Technologies*, 11 (2), 1066-1070, DOI: DOI:10.35940/ijeat.c6459.029320, SCOPUS
10. Rajiv Kumar, Shweta Pandit, Ashutosh Sharma (2020). Design of Reliable, Secure and Intelligent Systems for Healthcare Applications. *Recent Patents on Engineering*, 14 (3), 456-457, DOI: 10.2174/187221211403201130093110, SCOPUS.
11. Rajiv Kumar, Pardeep Kumar (2020). Special Issue on Recent Trends in Artificial Intelligence Techniques for Fault-Tolerance, Reliability and Availability in Mission-Critical Networks. Editorial: Recent Advances in Computer Science and Communications, 13 (3), 311-312, DOI : 10.2174/266625581303200609105423, SCOPUS Indexed.

12. Rajiv Kumar, Hemraj Saini (2020). Secure, Resilient and Green Computing in Wireless Sensor Networks. Recent Patents on Electrical and Electronic Engineering, 13 (2), 128-129, DOI: 10.2174/235209651302200224110206, *SCOPUS Indexed*.
13. Geetanjali ,Ashutosh Sharma, Rajiv Kumar, Farhan Ahmad, Razi Iqbal. (2020). A trust management scheme to secure mobile information centric networks. Computer Communications, 151 (1 February 2020), 66-75, DOI: 10.1016/j.comcom.2019.12.024, *SCIE and SCOPUS Indexed, IF: 2.816*
14. A. Sharma, Rajiv Kumar, ManarWasif Abu Talib, Saurabh Srivastava, Razi Iqbal (2019). Network modelling and computation of quickest path for service-level agreements using bi-objective optimization. International Journal of Distributed Sensor Networks, 15 (10), 1-17, DOI: 10.1177/1550147719881116, *SCIE and SCOPUS Indexed, IF:1.151*
15. Amit Sharma, Pradeep Kumar Singh , Ashutosh Sharma, Rajiv Kumar (2019). An efficient architecture for the accurate detection and monitoring of an event through the sky. Computer Communications, 148 (2019), 115-128. DOI: 10.1016/j.comcom.2019.09.009, *SCIE and SCOPUS Indexed, IF: 2.816*.
16. Geetanjali , Ashutosh Sharma, Rajiv Kumar, RaziIqbal (2019). A Secure Communicating Things Network Framework for Industrial IoT using Blockchain Technology. Ad Hoc Networks, 94 (2019), 1-21. DOI: 10.1016/j.adhoc.2019.101933, *SCIE Indexed, IF: 3.643*.
17. A. Sharma, Rajiv Kumar (2019). A constrained framework for context-aware remote E-healthcare (CARE) services. Transaction on Emerging Telecommunications Technologies, (2019), 1-19. DOI: 10.1002/ett.3649, *SCIE Indexed, IF: 1.594*.
18. Geetanjali , Ashutosh Sharma, Hemraj Saini, Rajiv Kumar, Razi Iqbal (2019). A Hybrid Framework for Multimedia Data Processing in IoT-Healthcare using Blockchain Technology. Multimedia Tools and Applications, pp. 1-23, DOI: 10.1007/s11042-019-07835-3,
19. Ashutosh Sharma, Rajiv Kumar (2019). Computation of the Reliable and Quickest Data Path for Healthcare Services by Using Service-Level Agreements and Energy Constraints. Arabian Journal for Science and Engineering, 44, 1-18, DOI: 10.1007/s13369-019-03836-4, *SCIE and SCOPUS Indexed, IF: 1.711*.
20. Ashutosh Sharma, Rajiv Kumar, Pradeep Kumar Singh (2019). SLA Constraint Quickest Path Problem for Data Transmission Services in Capacitated Networks. International Journal of Performability Engineering, 15 (4), 1061-1072, DOI: 10.23940/ijpe.19.04.p1.10611072, *SCOPUS Indexed, IF: 1.20*.
21. Ashutosh Sharma, Rajiv Kumar (2019). A Framework for Risk-Energy Aware Service-Level Agreement Provisioning (RESP) for Computing the Quickest Path. Journal of Computer Networks and Communications, 2019 (Article ID 4109453), 1-8, DOI: 10.1155/2019/4109453, *ESCI and SCOPUS Indexed*.
22. Ashutosh Sharma, Rajiv Kumar (2019). Service level agreement and energy cooperative cyber physical system for quickest healthcare services. Journal of Intelligent and Fuzzy Systems, 36 (5), 4077-4089, DOI: 10.3233/JIFS-169968, *SCIE and SCOPUS Indexed*.
23. Ashutosh Sharma, Geetanjali , Rajiv Kumar, Hemraj Saini, VijayakumarVaradarajan, Yunyoung Nam, Naveen Chilamkurti (2019). A Secure, Energy- and SLA-Efficient (SESE) E-Healthcare Framework for Quickest Data Transmission Using Cyber-Physical System. Sensors,19 (9), 1-22, DOI: 10.3390/s19092119 ,*SCI and SCOPUS Indexed IF:3.27*.
24. Ashutosh Sharma, Geetanjali , Rajiv Kumar, Hemraj Saini, Vijaykumar V., Yunyoung Nam, Naveen Chilamkurti (2019). A Secure, Energy and SLA-Efficient (SESE) E-Healthcare Framework for Quickest Data Transmission Using Cyber-Physical System. Sensors, 19 (9), 1-21, DOI: 10.3390/s19092119 ,*SCI and SCOPUS Indexed, IF:3.27*.

25. Dinesh Kumar, Ashutosh Sharma, Rajiv Kumar, Neeru Sharma (2019). A Holistic Survey on Disaster and Disruption in Optical Communication Network. *Recent Advances in Electric and Electronics Engineering*, 12 (6), 1-13, DOI: 10.2174/2352096512666190215141938, *ESCI and SCOPUS Indexed*.
26. S. Bhailaik, Rajiv Kumar, A. Sharma, Neeru Sharma (2019). Performance Modeling and Analysis of WDM Optical Networks under Wavelength Continuity Constraint using MILP. *Recent Advances in Electric and Electronics Engineering*, 12 (6), 1-13, DOI: 10.2174/2352096512666190214105927, *ESCI and SCOPUS Indexed*.
27. Jyotsna Dogra, Shruti Jain, Ashutosh Sharma, Rajiv Kumar, Meenakshi Sood (2019). Brain Tumor Detection from MR Images employing Fuzzy Graph Cut Technique. *Recent Patents on Computer Science*, Volume 12 (4 Issues), DOI: 10.2174/2213275912666181207152633, *SCOPUS Indexed*.
28. Ashutosh Sharma, Rajiv Kumar, Rakesh Kumar Bajaj (2019). On Energy-constrained Quickest Path Problem in Green Communication Using Intuitionistic Trapezoidal Fuzzy Numbers. *Recent Patents on Computer Science*, Volume 12 (4 Issues), DOI : 10.2174/2213275911666181025125224, *SCOPUS Indexed*.
29. Ashutosh Sharma, Rajiv Kumar (2019). SLA-Energy Cooperative Quickest Ambulance Routing for Critical-Healthcare Services. *Arabian Journal for Science and Engineering*, (), 1-18, DOI: 10.1007/s13369-018-3687-z, *SOPUS Indexed*
30. Ashutosh Sharma, Rajiv Kumar (2019). Risk-Energy Aware Service Level Agreement Assessment for Computing Quickest Path in Computer Networks. *Int. J. Reliability and Safety*, vol. 13 (no. 1-2), 96-124, DOI: 10.1504/IJRS.2019.097019, *SOPUS Indexed*

Complete List(Miscellaneous):

Journal(s) :

1. Ashutosh Sharma, Piotr Cholda, Rajiv Kumar, Gaurav Dhiman (2021). Risk-aware optimized quickest path computing technique for critical routing services. *Computers and Electrical Engineering*, 95 (6), 107436-107436
2. Hemant K. Gianey, Mumtaz Ali, Varadarajan Vijayakumar, Ashutosh Sharma, Rajiv Kumar (2021). Low Cost and Centimeter-level Global Positioning System Accuracy Using Real-Time Kinematic Library and Real-time Kinematic GPSA. *Recent Advances in Computer Science and Communications*, 14 (2), 360-367
3. Ratish Kumar, Rajiv Kumar, MJ Nigam (2021). An Improved Lag-Time Compensation Technique in Distributed Networked Control System based on Smith Predictor. *Informatica*, 45 (5), 605-611
4. Dinesh Kumar, Rajiv Kumar, Neeru Sharma (2021). A Parallel cross-connection recovery scheme for dual link failure in elastic optical networks. *Journal of Optical Communications*, (), -
5. Ratish Kumar, Rajiv Kumar, Madhav Ji Nigam (2021). Performance Accretion in Delay Compensation of Networked Control System using Markov Approach based Randomness Estimation in Smith Predictor. *International Journal of System Dynamics Applications (IJSDA)*, 11 (3), -
6. Rajiv Kumar, Pradeep Kumar Singh, Ashutosh Sharma (2021). B Smart Technologies in Engineering Applications of Cyber Physical System in Healthcare: Sensing, Imaging, Computing and Networking. *Recent Advances in Computer Science and Communications*, 14 (1), 225-226
7. Dinesh Kumar, Rajiv Kumar, Neeru Sharma (2020). A Proactive Link Based Fast Recovery Strategy for Survival Elastic Optical Networks. *International Journal of Engineering and Advanced Technology*, 9 (3), 4018-4022
8. Poongodi M., A Sharma, V Vijayakumar, V Bhardwaj, AP Sharma, R Iqbal, Rajiv Kumar (2020). Prediction of the price of Ethereum blockchain cryptocurrency in an industrial finance system. *Computers and Electrical Engineering*, 81 (January 2020), -. Google Citation

9. Dinesh Kumar, Rajiv Kumar, Neeru Sharma (2020). Proactive fast connection recovery scheme for a failure in elastic optical networks. *International Journal on Emerging Technologies* , 11 (2), 1066-1070
10. Dinesh Kumar, Rajiv Kumar, Neeru Sharma (2020). Path-based recovery scheme for a failure in elastic optical networks. *International Journal on Emerging Technologies* , 11 (4), 178-183
11. Dinesh Kumar, Rajiv Kumar, Neeru Sharma (2020). Resource efficient recovery scheme for double link failures in elastic optical networks. *Materials Today: Proceedings* , Available online 19 December 2020 (In Press), -
12. Rajiv Kumar, Shweta Pandit, Ashutosh Sharma (2020). Design of Reliable, Secure and Intelligent Systems for Healthcare Applications. *Recent Patents on Engineering*, 14 (3), 456-457
13. Rajiv Kumar, Pardeep Kumar (2020). Recent Trends in Artificial Intelligence Techniques for Fault-Tolerance, Reliability and Availability in Mission-Critical Networks. *Recent Advances in Computer Science and Communications*, 13 (3), 311-312
14. Rajiv Kumar, Hemraj Saini (2020). Secure, Resilient and Green Computing in Wireless Sensor Networks. *Recent Patents on Electrical and Electronic Engineering*, 13 (2), 128-129
15. Geetanjali Rathee, Ashutosh Sharma, Rajiv Kumar, Farhan Ahmad, Razi Iqbal. (2020). A trust management scheme to secure mobile information centric networks. *Computer Communications*, 151 (1 February 2020), 66-75. Google Citation
16. Ashutosh Sharma, Rajiv Kumar, Manar Wasif Abu Talib, Saurabh Srivastava, Razi Iqbal (2019). Network modelling and computation of quickest path for service-level agreements using bi-objective optimization. *International Journal of Distributed Sensor Networks*, 15 (10), 1-17. Google Citation
17. Geetanjali Rathee, A Sharma, R Iqbal, M Aloqaily, Naveen Jaglan , Rajiv Kumar (2019). A Blockchain Framework for Securing Connected and Autonomous Vehicles. *Sensors*, 19 (14), -
18. A. Sharma, Rajiv Kumar (2019). Service-Level Agreement—Energy Cooperative Quickest Ambulance Routing for Critical Healthcare Services. *Arabian Journal for Science and Engineering*, 44 (44), 3831-3848. Google Citation
19. Amit Sharma, Pradeep Kumar Singh , Ashutosh Sharma, Rajiv Kumar (2019). An efficient architecture for the accurate detection and monitoring of an event through the sky. *Computer Communications*, 148 (2019), 115-128. Google Citation
20. Geetanjali Rathee, Ashutosh Sharma, Rajiv Kumar, RaziIqbal (2019). A Secure Communicating Things Network Framework for Industrial IoT using Blockchain Technology. *Ad Hoc Networks*, 94 (November 2019), 1-21. Google Citation
21. Ashutosh Sharma, Rajiv Kumar (2019). A constrained framework for context-aware remote E-healthcare (CARE) services. *Transaction on Emerging Telecommunications Technologies, SPECIAL ISSUE ARTICLE* (17 June 2019), 1-19. Google Citation
22. Geetanjali Rathee, Ashutosh Sharma, Hemraj Saini, Rajiv Kumar, Razi Iqbal (2019). A Hybrid Framework for Multimedia Data Processing in IoT-Healthcare using Blockchain Technology. *Multimedia Tools and Applications*, 79 (03 June 2019), 1-23. Google Citation
23. Ashutosh Sharma, Rajiv Kumar (2019). Computation of the Reliable and Quickest Data Path for Healthcare Services by Using Service-Level Agreements and Energy Constraints. *Arabian Journal for Science and Engineering*, 44 (10 April 2019), 1-18. Google Citation
24. Ashutosh Sharma, Rajiv Kumar, Pradeep Kumar Singh (2019). SLA Constraint Quickest Path Problem for Data Transmission Services in Capacitated Networks. *International Journal of Performability Engineering*, 15 (4), 1061-1072

25. Ashutosh Sharma, Rajiv Kumar (2019). A Framework for Risk-Energy Aware Service-Level Agreement Provisioning (RESP) for Computing the Quickest Path. *Journal of Computer Networks and Communications*, 2019 (Article ID 4109453), 1-8. Google Citation
26. Ashutosh Sharma, Rajiv Kumar (2019). Service level agreement and energy cooperative cyber physical system for quickest healthcare services. *Journal of Intelligent and Fuzzy Systems*, 36 (5), 4077-4089. Google Citation
27. Ashutosh Sharma, Geetanjali Rathee, Rajiv Kumar, Hemraj Saini, Vijaykumar V., Yunyoung Nam, Naveen Chilamkurti (2019). A Secure, Energy and SLA-Efficient (SESE) E-Healthcare Framework for Quickest Data Transmission Using Cyber-Physical System. *Sensors*, 19 (9), 1-21
28. Dinesh Kumar, Ashutosh Sharma, Rajiv Kumar, Neeru Sharma (2019). A Holistic Survey on Disaster and Disruption in Optical Communication Network. *Recent Advances in Electric and Electronics Engineering*, 12 (6), 1-13
29. S. Bhailaik, Rajiv Kumar, A. Sharma, Neeru Sharma (2019). Performance Modeling and Analysis of WDM Optical Networks under Wavelength Continuity Constraint using MILP. *Recent Advances in Electric and Electronics Engineering*, 13 (2), 203-211
30. Jyotsna Dogra, Shruti Jain, Ashutosh Sharma, Rajiv Kumar, Meenakshi Sood (2019). Brain Tumor Detection from MR Images employing Fuzzy Graph Cut Technique. *Recent Advances in Computer Science and Communications*, 13 (3), -
31. Ashutosh Sharma, Rajiv Kumar, Rakesh Kumar Bajaj (2019). On Energy-constrained Quickest Path Problem in Green Communication Using Intuitionistic Trapezoidal Fuzzy Numbers. *Recent Patents on Computer Science*, 12 (4), -
32. Ashutosh Sharma, Rajiv Kumar (2019). SLA-Energy Cooperative Quickest Ambulance Routing for Critical-Healthcare Services. *Arabian Journal for Science and Engineering*, (), 1-18. Google Citation
33. Ashutosh Sharma, Rajiv Kumar (2019). Risk-Energy Aware Service Level Agreement Assessment for Computing Quickest Path in Computer Networks. *International Journal of Reliability and Safety*, 13 (1-2), 96-124
34. Ashutosh Sharma, Rajiv Kumar (2017). A Framework for Pre-Computed Multi-Constrained Quickest QOS Path Algorithm. *Journal of Telecommunication, Electronic and Computer Engineering*, 9 (3-6), 73-77
35. Poonam Koundal, Rajiv Kumar (2016). Reliable Fault-Tolerant Multipath Routing Scheme for Wireless Sensor Networks. *International Journal of Modern Trends in Engineering and Research (IJMTER)*, 3 (5), 2349-9745. Google Citation
36. Ashutosh Sharma, Rajiv Kumar, Poonam Koundal (2016). A Tuning-Based Approach for the Multi-Constrained Data-Path Transmission. *International Journal of Control Theory and Automation (I J C T A)*, 9 (11), 5521-5528. Google Citation
37. Ashutosh Sharma, Rajiv Kumar (2015). Realistic Comparison of Performance Parameters of Static and Dynamic Unicast Routing over Mesh Topology. *International Journal of Scientific & Engineering Research*, 6 (12), 202-207
38. Vinod Kumar, Rajiv Kumar (2013). Effect of Network-Induced Delay on Stability in Networked Control System. *International Journal of Scientific Research*, 4 (2), 18-21
39. Sumit Vardhan, Rajiv Kumar (2011). Simulations for Time-Delay Compensation in Networked Control Systems. *Journal of Selected Areas in Telecommunications (JSAT)*, (June), 38-43
40. Rajiv Kumar, Krishan Gopal, G L Pahuja (2007). A Dependable routing Framework for seamless Traffic Flow over the Computer Network. *International Journal HIT Transactions on ECCN*, 2 (6), 306-312
41. Krishna Gopal, Rajiv Kumar (2007). An Algorithm for Computing the Best-Performing Path in a Computer Network. *International Journal of Performability Engineering*, 3 (2), 203 -212

Conference(s) :

42. Ashutosh Sharma, Rajiv Kumar (2019). Study of Issues and Challenges of Different Routing Protocols in Wireless Sensor Network. *Proceedings of the International Conference on Image Information Processing (ICIIP-20019)* [5th : Dept. of CSE, JUIT, Solan, H.P., India : 15-17 November, 2019], pp.-.. Google Citation
43. Dinesh Kumar, Rajiv Kumar, Neeru Sharma (2019). A Risk Reduction Approach in Optical Backbone Network. *Proceedings of the International Conference on Signal Processing, Computing and Control (ISPCC-2k19)* [5th : Dept. of ECE, JUIT, Solan, H.P., India : 10-12 October, 2019], pp.-.. Google Citation
44. Ratish Kumar, Rajiv Kumar, M. J. Nigam (2019). Path Planning of Networked Robot Using Camera Feedback Minimize Computational Time. *Proceedings of the International Conference on Signal Processing, Computing and Control (ISPCC- 2k19)* [5th : Dept. of ECE, JUIT, Solan, H.P., India : 10-12 October, 2019], pp.-.. Google Citation
45. Ratish Kumar, Rajiv Kumar, M. J. Nigam (2019). Evolution of Third Eye with the convergence of Networked Control System and Image Processing Techniques. *Proceedings of the International Conference on Image Information Processing (ICIIP-20019)* [5th : Dept. of CSE, JUIT, Solan, H.P., India : 15-17 November, 2019], pp.-.. Google Citation
46. Ratish Kumar, Rajiv Kumar, M. J. Nigam (2019). Novel Applications of Networked Control System in Precision Polyhouse Farming. *Proceedings of the Proceedings of International Conference on Artificial Intelligence and Applications* [College of Engineering Roorkee, Roorkee, (UK) : 20-21 November, 2019], pp.202-205.. Google Citation
47. Dinesh Kumar, Ashutosh Sharma, Rajiv Kumar, Neeru Sharma (2019). Restoration of the Network for Next Generation (5G) Optical Communication Network . *Proceedings of the International Conference on Signal Processing and Communication* [5th : Jaypee Institute of Information Technology, Noida (INDIA) : March 7th-9th, 2019], pp.-.. Google Citation
48. Dinesh Kumar, Rajiv Kumar, Neeru Sharma (2018). Minimizing the Disconnection Probabilities in Optical Backbone Network. *Proceedings of the Himachal Pradesh Science Congress, Theme: Rural Upliftment Through Science & Technology Interventions* [3rd. : IIT Mandi, Himachal Pradesh : 22-23 October, 2018], pp.-.. Google Citation
49. Rajib Bag, Debasis Das, Rajiv Kumar (2017). An architecture of smart transportation system using modified RR algorithm and VANET. *Proceedings of the 8th International Conference on Computing, Communication and Networking Technologies (ICCCNT)* [N. Delhi : 3-5 July 2017], pp.-.. Google Citation
50. A. Sharma, Mohd Dilshad Ansari, Rajiv Kumar (2017). A comparative study of edge detectors in digital image processing. *Proceedings of the International Conference on Signal Processing, Computing and Control (ISPCC)* [4th : JUIT, India : 21-23 Sept. 2017], pp.246-250.. Google Citation
51. Ashutosh Sharma, Rajiv Kumar (2017). Routing Protocols in Wireless Sensor Networks: Issues and Challenges. *Proceedings of the IEEE India Com 2017* [11th. : New Delhi : 01 - 03 March, 2017], pp.-.. Google Citation
52. Ashutosh, Rajiv Kumar (2016). Performance Comparison and Detailed Study of AODV, DSDV, DSR, TORA and OLSR Routing Protocols in Ad Hoc Networks. *Proceedings of the International Conference on Parallel, Distributed and Grid Computing(PDGC)* [4th. : Jaypee University of Information Technology, Wagnaghat, Solan, H.P.(India) : 22-24 December, 2016], pp.-.. Google Citation
53. Rajiv Kumar, Piotr A Cholda, (2015). A Framework for Continuity of Mission-Critical Network Services. *Proceedings of the IEEE International Conference on Advanced Networks and Telecommunication* [Kolkata, India : 15-18 December, 2015], pp.-.. Google Citation

54. Rajiv Kumar, Sumit Vardhan, Vipul Sharma (2014). A Dependable Routing Framework for Seamless Traffic Flow over the Computer Network. *Proceedings of the International Conference on Optimization, Reliability, and Information Technology (ICROIT)*, [Faridabad, India : Feb. 6-8, 2014], pp.199-203.. Google Citation
55. Sumit Vardhan, Rajiv Kumar (2011). An Implementation of Time-Delay Compensation Scheme for. *Proceedings of the International Conference on Computational Intelligence and Communication Networks (CICN)*, [Gwalior, India : 7-9 October, 2011], pp.149-153.. Google Citation
56. Rajiv Kumar, Krishna Gopal, G.L. Pahuja (2009). A Resource Allocation Framework for the Predictable Continuity of Mission-Critical Network Services . *Proceedings of the 20th International Symposium on Software Reliability Engineering (2009)* [Mysuru, Karnataka, India : 16-19 November, 2009.], pp.1-2.. Google Citation
57. Rajiv Kumar, Krishna Gopal (2008). Service Availability for Real-Time Mission Critical Computer Communication Network,. *Proceedings of the International Conference on Data Management* [IMT Ghaziabad, : 25-26 February, 2008], pp.-.. Google Citation
58. Rajiv Kumar, Krishna Gopal (2008). Some Aspects of Dependability Based Trust in IP-Network for the Mission Critical Real-Time Services. *Proceedings of the International Conference on Data Management* [IMT Ghaziabad : 25-26 February, 2008], pp.-.. Google Citation
59. Yuvraj Singh, Ankit Bhatt, Varun Uppal, Mandeep Rawat, Rajiv Kumar (2008). An Algorithm for Computing the Best Performing Path and Path Recovery Procedure for Multimedia Applications, over Computer Networks. *Proceedings of the 2008 International Conference on Communications in Computing, CIC 2008, July 14-17, 2008, Las Vegas* [Nevada, USA. : July 14-17, 2008], pp.14-19.. Google Citation
60. Yuvraj Singh, Ankit Bhatt, Varun Uppal, Mandeep Rawat, Rajiv Kumar (2008). Optimum Path Computation Algorithm for Real Time Multimedia Applications over Computer Networks. *Proceedings of the International Conference on Communications in Computing, CIC 2008* [Las Vegas, Nevada, USA : July 14-17, 2008], pp.20-24.. Google Citation
61. Krishna Gopal, Rajiv Kumar (2006). Reliability Constrained Minimum-Delay Transmission Path-Routing for Data Network. *Proceedings of the Thirteenth International Conference of the Forum for Interdisciplinary Mathematics on Interdisciplinary Mathematical and Statistical Techniques* [13th : Portugal : 1-4 September, 2006], pp.-.. Google Citation
62. Krishna Gopal, Rajiv Kumar (2006). Fault-Management Techniques for the Best Performing Path in a Computer Network. *Proceedings of the International Conference on Quality, Reliability and Information Technology ICQRIT 2006* [3rd : New Delhi : 2-4 December, 2006], pp.-.. Google Citation
63. Krishna Gopal, Rajiv Kumar (2005). Performance Reliability of Flow Networks. *Proceedings of the 2005 Asia Pacific Conference on Risk Management and Safety* [1st : Hong Kong : 1-2, December, 2005], pp.217-224.. Google Citation

Abstract/ Poster Presentations/ Invited Lectures in Conferences :

64. Ratish Kumar, **Rajiv Kumar**, M. J. Nigam (2018). Networked Control System: An innovation to enhance the quality of agriculture in the state of Himachal Pradesh. *Proceedings of the Himachal Pradesh Science Congress* [3rd : Indian Institute of Technology, Mandi, H.P., India : October 22 - 23], pp.140-.. **Google Citation**
65. Ashutosh Sharma, **Rajiv Kumar** (2018). A Framework to Design the Smart City Infrastructure for Critical Smart Services in Himachal Pradesh. *Proceedings of the Himachal Pradesh Science Congress, Theme: Rural Upliftment Through Science & Technology Interventions* [3rd : IIT Mandi, Himachal Pradesh : October 22-23, 2018], pp.135-135.. **Google Citation**
66. Ratish Kumar, M. J. Nigam, **Rajiv Kumar** (2018). Networked Ccontrol System: An Innovation to Enhance the Quality of Agriculture in the State of Himachal Pradesh. *Proceedings of the Himachal Pradesh Science Congress, Theme: Rural Upliftment Through Science & Technology Interventions* [3rd : IIT Mandi, Himachal Pradesh : October 22-23, 2018], pp.140-140.. **Google Citation**

BOOK:

Rajiv Kumar, K. Gopal, G.L. Pahuja, A Conceptual Framework for the Continuity of MC Network Services, LAP LAMBERT Academic Publishing (July 5, 2019). 978-6139863273.
<https://www.amazon.com/Conceptual-Framework-Continuity-Network-Services/dp/6139863279>

About: A conceptual framework for the continuity of real-time mission critical (RTMC) services such as tele-surgery, remote-control, tele-maintenance etc. has been advanced. This framework is helpful in allocating network resources for the delivery of RTMC services. Proposed framework is based upon the concepts of quality of service (QoS) routing and fault-recovery schemes. It is capable of supporting an architectural framework for designing the protocols for delivery of mission-critical services.

M.Tech. and Ph.D. Thesis

PhD Supervisor:

(Sole Guidance)

1) Ashutosh Sharma (Enrollment No. 166001), titled "Risk-Aware Communication Network Architecture And Planning" (*Defended May, 2020*)

(Joint Guidance)

- 1) Dinesh Sharma (Enrollment No. 176009), titled, "Proactive Connection Recovery Strategy for a Survivable Elastic Optical networks" (*Defended April, 2021*)
- 2) Ratish Kumar (Enrollment No. 186001), Synopsis held on Sept 24, 2021

Current Doctoral Students:

- 1) MunishPatial (Enrollment No. 196004)
- 2) Vandana Devi (Enrollment No. 206001)
- 3) Aakanksha Sharma (Enrollment No. 206002)
- 4) Ravikant Sharma (Enrollment No. 206005)
- 5) Shalini Sharma (Enrollment No. 216005)
- 6) Muskan Kapoor (Enrollment No. 228060003)

M.Tech. Supervisor:

(Sole Guidance)

- 1) Ashutosh Sharma (Enrollment No. 142006), titled "A Tuning based Multiconstrained Link weight Assignment for Optimized Data Transmission", 2016.
- 2) Poonam Koundal (Enrollment No. 142011), titled "Analysis of round trip delay and path, and routing protocol in wireless sensor network", 2016.
- 3) AshitChander (Enrollment No. 152008), titled, "Adaptation to Non-Critical Failure and Performance Analysis of Optical WDM Networks", 2017.

(Joint Guidance)

- 1) Swati Bhalaik (Enrollment No. 162006), titled, "Performance Analysis of Optical WDM Networks Using MATPLAN WDM", 2018
- 2) Aman Sharma (Enrollment No. 16200), titled, "Some Performance Aspects of Wavelength Division Multiplexing", 2018
- 3) Sanjay K. Singh (212055), titled, "Orion – Interactive optical Network, May 2023.

Current Undergraduate Students: Aditya Jaiswal, Avinash Verma

DPMC COMMITTEE MEMBER

Working as external DPMC Committee Member in other Depts:

Civil Engineering: 02

BI & BT: 01

CSE & IT: 04

EXTERNAL THESIS EVALUATION

Ph.D. Thesis Evaluation :

1. Komal Jindal (2019), Thapar Institute of Engineering and Technology, Patiala Punjab.
2. Namita Saini(2020), ShooliniUniversity, H.P.

Synergistic activities:

Dr. Rajiv Kumar currently focused on two fields that complement each other excellently: IoT and Networked Control Systems. The research projects in the above two fields are a result of my interest in Networks and Systems. He specializes in mission-critical activities, modeling disaster recovery and intelligent transportation.

UNIVERSITY SERVICES

Team Lead:

Organized Virtual Lab Workshops:

- 1) Workshop on Virtual Labs by IIT Delhi: 20-21 September, 2019
- 2) Preliminary sessions of virtual lab: 13th August, 2018 to 15th August, 2018
- 3) Virtual Lab by IIT Delhi: 11th October, 2018 to 13th October, 2018
- 4) 17th November, 2017 by IIT Delhi
- 5) Workshop on College Cloud Ed. for VLabs by IIITH: 9-12 May, 2017
- 6) 28th-29th April, 2017 by IIT Roorkee
- 7) State Level Workshop: 28th February, 2017 by IIT Delhi
- 8) 24th-25th September, 2016 by IIT Delhi
- 9) 15th-16th October, 2016 by IIT Roorkee

Organized I Lecture in collaboration with IISc-IEEE University Partnership Program, Oct. 9, 2019.

Organized Webinar on Strategy of Teaching. Speaker: Prof. G.S. Hura, University of Maryland, Sept 17, 2020.

Organized Webinar on Interdisciplinary approaches to improve resiliency at scales for humans and ecosystems to thrive. Speaker: Dr. Ashish Sharma, University of Illinois, August 24, 2020.

Organized Alumni for supporting in mentoring, webinar, placement, internship

Chair Laundry Rate Fixing Committee, July, 2019

Chair Disciplinary Committee, June, 2020.

JUIT-Photography Club, Faculty In-charge, 2016-2017.

Professional Services

- Invited as Executive Guest Editor, for International Journal of Sensors, Wireless Communications and Control, Netherlands, in September, 2020.
- Invited as TPC in Second International Conference on Computing, Communication & Cyber Security, KEC, Ghaziabad, Oct. 03-04, 2020.
- Invited as Keynote Speaker at IDC National Conference, Climate Change and Agriculture: Impacts, Resilience & Adaptations for Sustainable Food Security, 20-21 December, 2019.
- 5th International Conference on Image Information Processing (ICIIP-20019), Dept. of CSE, JUIT, Solan, H.P., India : 15-17 November, 2019.
- International Conference on Artificial Intelligence and Applications, College of Engineering Roorkee, Roorkee, (UK) : 20-21 November, 2019.
- 5th IEEE International Conference on signal processing and control (ISPCC 2k19), Jaypee University of Information technology, Waknaghat, Solan, H.P, India.
- 3rd Himachal Pradesh Science Congress, Indian Institute of Technology, Mandi, H.P., India : October 22 – 23, 2018.
- Invited as Guest Editor for Special Issue on Recent Trends in Artificial Intelligence Techniques for Fault Tolerance, Reliability and Availability in Mission-Critical Networks in Journal Recent Patents on Computer Science, Bentham Science, United Arab Emirates Due Date 31st October, 2018.
- Invited as Guest Editor for Special Issue on Secure, Resilient and Green Computing in Wireless Sensor Networks, Recent Advances in Electrical and Electronic Engineering (RAEEE) (eSCI, SCOPUS), Bentham Science, Netherlands.

- Associate Editor of Journal of Selected Areas in Telecommunications (JSAT) since 2014
- Organizing Committee Member, International Conference on Signal Processing, Computing and Control (ISPPCC), 2019, 2017, Jaypee University of Information Technology, Wagnaghat, India.
- Session Chair, International Conference on Parallel, Distributed and Grid Computing(PDGC), Jaypee University of Information Technology, Wagnaghat, Solan, H.P.(India) : 22-24 December, 2016.
- 8th International Conference on Computing, Communication and Networking Technologies (ICCCNT), IIT Delhi, N. Delhi : 3-5 July 2017.
- IEEE India Com 2017, 11th. : New Delhi : 01 - 03 March, 2017.
- Effective Teaching workshop organized by Indo-US Collaboration for Engineering Education (IUCEE), June, 2012 at Jaypee University of Information Technology, Wagnaghat, India. Expert: Dr. Veena Kumar, Director, Program in American Language Studies, Rutgers, the State University of New Jersey, USA.
- Wireless Sensor Network workshop organized by Indo-US Collaboration for Engineering Education (IUCEE), July 5-9, 2011 at Jaypee University of Information Technology, Wagnaghat, India. Expert: Dr. Shubhalaxmi Kher, Assistant professor of Electrical Engineering at Arkansas State University, USA.
- Indo-US Workshop on System of Systems Engineering(SoSE), October 26-28, 2009, Indian Institute of Technology, Kanpur, India. Conducted by: Prof.
- Dr. Laxmidhar Behera, Expert: Dr. Mo Jamshidi Lutchter Brown Endowed Chair Professor Department of Electrical and Computer Engineering Director, University of Illinois – Urbana-Champaign, USA.

Orientation/Refresher Courses, Summer/Winter Schools, Faculty Development Programmes, Seminars/Conferences/Workshops Attended/ Organized:

1. Workshop on virtual Labs (Hands-on Laboratory Experiments), Sponsored by IIT Roorkee, Oct. 15 – 16, 2016, Organized at JUIT, Wagnaghat
2. Virtual Lab workshop by the team of experts from Indian Institute of Technology, Sponsored by IIT Delhi, Sept. 24-25, 2016, JUIT, , Organized at Wagnaghat
3. State Level Virtual Lab Workshop by IIT Delhi. Feb. 28, 2017, Organized at JUIT, Wagnaghat.
4. Virtual Lab workshop for Lab. Staff by the team of experts from Indian Institute of Technology, Roorkee, April 28-29, 2017, , Organized at JUIT, Wagnaghat.
5. Workshop on College Cloud Edition for Virtual Labs by IIIT Hyderabad, May 9-12, 2017, JUIT, Wagnaghat, Organized.(One week)
6. Cloud Computing through ICT, 23/10/2017-27/10/2017, sponsored by NITTTR-Chandigarh, conducted at JUIT, Wagnaghat, Participated.(One week)
7. Wireless and Mobile Communication through ICT, 30/10/2017-03/11/2017, sponsored by NITTTR-Chandigarh, conducted at JUIT, Wagnaghat, Participated.(One week)
8. Workshop on MOOCS, 15/09/2017, conducted at JUIT, Wagnaghat, Participated.
9. Workshop on Patent Drafting, 13/10/2017, conducted at JUIT, Wagnaghat, participated.
10. National Workshop on Statistical Techniques in Biological and Medical Sciences, 04/06/2018-09/06/2018, conducted at JUIT, Wagnaghat, Participated. (one week)
11. FDP on Emerging Trend in VLSI and Communication, 09/06/2018-18/06/2018, conducted at JUIT, Wagnaghat, participated. (one week)
12. Organized TIEDC Workshop, Nov 16-17, 2018.
13. Organized VLAB Workshop, Nov 16, 2018 by IIT-D, at JUIT, Wagnaghat.
14. Organized Induction Orientation Program, from 16/07/2018 to 31/07/2018, at JUIT.(one week)
15. Attended Patent Filing Procedures and Geographical Indications of H.P. 30/11/2018, at JUIT, participated.

16. Organized expert Lecture, Antenna Design for 5G & IoT Communications, 18/04/2019, at JUIT.
17. Attended one week FDP on Recent Trends on Machine Learning for Signal Processing (RTMLS), May 20-25,2019, at JUIT, Wagnaghat, participated. (one week)
18. Organized Workshop on Advance Wireless Systems Sept.19, 2018, at JUIT, Wagnaghat.
19. Attended one Day Workshop on Benchmark WiCOMM-T:Wireless Digital Communication Training System" and "Benchmark iCONSeT: An IoT Training System, Feb. 25, 2019, at JUIT.
20. Organized Preliminary Sessions of virtual lab on August 13-15,2018 at JUIT, Wagnaghat. (one week)
21. Organized Virtual lab Workshop for First Year Students on Oct. 11-13, 2018 at JUIT.
22. Attended Invited Lecture compressed Sensing: Beating the Nyquist Sampling March 23, 2019, at JUIT.

Courses Taught:

1. Real-time Operating System (19B1WEC731)
2. Automatic Control Systems (18B11EC311)
3. Internet and Applications (20P11EC111)
4. Fault-Tolerant Comm. Networks (14M1WEC331)
5. Electrical Machines & Inst Lab (10B19EC791)
6. Signals and Systems (110B11EC301)
7. Real-Time Embedded Systems(12M1WEC232)
8. Non-Linear & Digital Control Systems (14B1WEC734)
9. Electrical Machine & Instruments (10B11EC311)
10. Power Electronics Lab (11B1WEC671)
11. Fault-Tolerant Systems (11M1WEC433)
12. Design of Dependable Systems (18B1WEC732)
13. Advanced Control Systems(16M1WEC231)
14. Networked Embedded Control Systems (18B1WEC834)
15. Digital Electronics Lab (10B17EC407)

Syllabi Developed:

1. IoT and Applications
2. Automatic Control Systems
3. Introduction to IoT
4. Networked Control Systems

Instructional Material Provided to Students:

1. Introduced project based leaning
2. Outcome based learning
3. Syllabus modified for courses Application oriented topics were introduced.

Contribution in Extra & Co- Curricular activities of Students:

1. Motivated students in participating the following workshops/seminar:
2. CV Making workshop Under TIED Cell, May 4th, 2017
3. One Day Seminar on Startups and Innovative Projects, May 16, 2017.
4. Involved in workshops Under TIED Cell
5. Conducting Virtual Lab workshops.
6. Coordinator for Conduction Committee for Ph.D. Students
7. Involved in Mentoring of students
8. Involved in the Virtual Lab awareness program for the JUIT students.

Contribution/ Participation in Departmental Activities & Development:

1. Ph.D. Coordinator for research scholars.
2. Worked as project in-charge for UG students.

3. Participated in Lab. Development of two courses: (i) Signals and Systems, (ii) Electrical Machines and Instruments, (ii) Control Systems
4. As a member of Organizing committee in ISPC'17
5. DPMC member-1 for five Ph.D. scholars.
6. Worked as project in-charge for UG students (Upto Dec 2017).
7. Participated in Lab. Development of two courses: (i) Signals and Systems, (ii) Electrical Machines and Instruments, (iii) Control Systems 2019
8. As a member of Organizing committee in ISPC 2019
9. Organizing Committee of FDP, June 2018

Contribution/ Participation in Institute Activities & Development:

1. Coordinator of JUIT Virtual Lab Nodal Center
2. Founder Member of Technology and Incubation Development Cell
3. Participated in NAAC related activities
4. Organizer of Virtual Lab Workshops
5. Founder Member of Technology and Incubation Development Cell
6. Participated in NBA related activities
7. Participated in NAAC related activities

Special/ Extension/ Expert/Invited Lectures Delivered:

1. Special talk on Risk-aware Resilient Network Design at AGH University, Krakow, Poland during the Visit on DST Sponsored, India-Poland Research Grant, Sept 24-Oct, 2016.
2. Expert talk on TIED Cell inaugural Day, May 16, 2017.
3. Expert Talk during Virtual Labs. During Oct. 2016 to May 2017.
4. Special talk on Risk-aware Resilient Network Design at AGH University, Krakow, Poland during the Visit on DST Sponsored, India-Poland Research Grant, Dec. 20-25, 2018.
5. Talks during the Virtual Lab Workshops
6. Invited as Keynote Speaker at IDC National Conference, Climate Change and Agriculture: Impacts, Resilience & Adaptations for Sustainable Food Security, 20-21 December, 2019.

Technical Reports:

1. DST Project Dec, 16.
2. DST Project June 17.
3. On Workshop on virtual Labs (Hands-on Laboratory Experiments) by IIT Roorkee, Oct. 15 – 16, 2016
4. On Virtual Lab workshop by the team of experts from Indian Institute of Technology, Delhi, Sept. 24-25, 2016
5. On State Level Virtual Lab Workshop by IIT Delhi, Feb. 28, 2017
6. On Virtual Lab workshop for Lab. Staff by the team of experts from Indian Institute of Technology, Roorkee, April 28-29, 2017.
7. On Workshop on College Cloud Edition for Virtual Labs by IIIT Hyderabad, May 9-12, 2017
8. On One Day Seminar on Startups and Innovative Projects, May 16, 2017, report submitted to Dept. of Industry, H.P. Govt
9. DST Project Report in April 18.
10. Report Documentation of Virtual Labs (Hands-on Laboratory Experiments), 2019.
11. On Virtual Lab workshop by the team of experts from Indian Institute of Technology, Delhi., 2019
12. Report submitted to Dept. of Industry, H.P. Govt as a member of TIEDC, 2017.
13. Report on Ph.D. coordination, 2019.

Any Other Information:

1. Awarded Project worth for 60 Lakhs (rupees) by Dept. of Industry, H.P. Govt under **Chief Minister's Startup/ Innovation Projects/ New Industries Scheme**. Rs 20 Lakhs has already been received as first installment on 27/06/2017.
2. Guest Editorial-ship of SCOPUS Indexed Journal – Recent Patents on Computer Science
3. R&D Member in the Steering Committee of TIEDC, JUIT.

4. Invited as visiting research at AGH University of Science and Technology, Krakow, Poland in Dec. 2018.
5. Ph.D. Examiner for two Scholars at Thapar University, Patiala, June, 2018

Membership of Professional Societies

1. Member, The Institute of Electrical and Electronics Engineers, IEEE
2. Corporate Member, The Institution of Electronics and Telecommunication Engineers, IETE
3. Life Member, Indian Society of Technical Education, ISTE
4. Life Member, System Society of India, SSI
5. Life Member, Forum of Interdisciplinary Mathematics

INITIATIVES AS A HEAD OF DEPARTMENT

Following main initiatives have been taken in the ECE Dept. after July 1, 2020:

- 1) Dept-Industry linkage
- 2) Started Internship campaign for ece students 2022, 23
- 3) MoU with Mitsubishi Electric for the Training, Internship, Curriculum development, Placement in the areas of Automation, 2022(for one year), 2023(for three years).
- 4) Activities with Robert Bosch Centre for Cyber Physical Systems (RBCCPS) in IISc Bangalore, 2022.
- 5) As a General Chair, Organized 6th International Conference on Computing, Signal Processing and Control, Oct 07 – 08, 2021.
- 6) Started planning of 7th International Conference on Computing, Signal Processing and Control in year 2023.
- 7) Started new B.Tech. – Electronics and Computer Engineering, 2021.
- 8) Started new M.Tech. – Electronics and Communication Engineering with specialization IoT, 2021.
- 9) Revised course structure of M.Tech. in Electronics and Communication Engineering, 2021.
- 10) Started minor program of ECE for other branches, 2020.
- 11) Design and developed many courses as professional electives and open electives.
- 12) Reframed the ECE curriculum.
- 13) Started work on improving visibility of department
- 14) Revamped the Mentoring System in the ECE Department
- 15) Took initiative for MoU with H.P. Govt. Engineering College, Pragatinagar, Near Shimla, 2020.
- 16) Restructuring the laboratories
- 17) Started hardware lab services during pandemic period
- 18) Started work on the establishment of Robotic Lab
- 19) Started work on the establishment of IoT Lab
- 20) Involvement of JUIT-ECE Alumni for solving department problems
- 21) Revived the activities under Technovatorz Club
- 22) Scheduling of BoS
- 23) Initiated Skills Development Program
- 24) Steps towards the Institute Industry Program
- 25) Alumni database establish in the Dept.
- 26) One Day Workshop on Tinkercad for Hardware Design
- 27) Three Days Workshop for Labstaff on Network Analyzer
- 28) Training for faculty for Anydesk, Virtual Lab and GSuit
- 29) Started Webinar Series by Alumni

- 30) Webinar on Strategy of Teaching Methodology by Prof. G.S. Hura, 2020
- 31) Took Initiatives for Admission in Minor Program in ECE
- 32) Initiative in Dept. for GATE preparation
- 33) Provided the Mentoring facility for B.Tech. students
- 34) Initiatives to Improve the B. Tech. Project
- 35) Introduced volunteer project facility in the dept for all the years students
- 36) Proposed a framework for placement and career