Dr. Sanjay Kumar

Professor

Publications

(A)   In referred Journals

1. **Govind Singh Kushwaha, Sanjay Kumar, 2009**. "Role of Fuzzy Systems in Psychological Research", Europe's Journal of Psychology, 123-134.
2. **B. P. Joshi, Sanjay Kumar, 2011**. "Forecasting the Movement of Share Market Price using Fuzzy Time Series", International Journal of Fuzzy Mathematics and Systems, Vol.1, pp. 73-79.
3. **Sanjay Kumar, Deepak Chandra Pandey, Govind Kushwaha, 2012.** "Fuzzy Rule-Based Modeling for the Study of Some Psychological Parameter", International Journal of Mathematical Modeling, Simulation and Applications.
4. **Bhagawati P. Joshi and Sanjay Kumar, 2012**. "Intuitionistic Fuzzy Sets based method for Fuzzy Time Series Forecasting" Cybernetics and Systems, 43 (1), pp. 34-47.
5. **Bhagawati P. Joshi and Sanjay Kumar, 2012**. "Fuzzy Time Series Model based on Intuitionistic Fuzzy Sets for Empirical Research in Stock Market", International Journal of Applied Evolutionary Computation, 3(4), pp. 71-84.

6. **Sukhdev Singh Gangwar, Sanjay Kumar 2012** "Partitions Based Computational Method for Fuzzy Time Series Forecasting" Expert Systems with Applications, 39(15), pp. 12158-12164.
7. **Bhagawati P. Joshi and Sanjay Kumar, 2013**. "A Computational method for fuzzy time series forecasting based on difference parameters" International Journal of Modeling, Simulation and Scientific computing, 4(1), pp. 1-12
8. **Sukhdev S Gangwar, Sanjay Kumar, 2014."**Probabilistic and Intuitionistic Fuzzy Sets Based Method for Fuzzy Time Series Forecasting, Cybernetics and Systems: An international journal, 45 (4), pp. 349-361.
9. **Deepa Joshi, Sanjay Kumar, 2014.** "Intuitionistic fuzzy entropy and distance measure based TOPSIS method for multi-criteria decision making", Egyptian Informatics Journal, 15, pp. 97-104.
10. **Deepa Joshi, Sanjay Kumar, 2015 "**Interval-Valued Intuitionistic Hesitant Fuzzy Choquet Intehral Based TOPSIS method for Multi-Criteria Group Decision Making", European Journal of Operational Research, 248(1), 183-191.
11. **Sanjay Kumar, Sukhdev S Gangwar, 2015,** A fuzzy time series forecasting method induced by intuitionistic fuzzy sets, International Journal of Modeling, Simulation and Scientific computing, 6(4). 1550041-1550063.
12. **Sanjay Kumar, Sukhdev S Gangwar, 2015,** Intuitionistic fuzzy time series: An approach to handle non-determinism in time series forecasting, IEEE Transactions on Fuzzy Systems, 24(6), 1270-1281.

13. **Kamlesh Bisht, Sanjay Kumar, 2016,** Fuzzy time series forecasting method based on hesitant fuzzy sets, Expert Systems with Applications, 64, 557-568.
14. **Sanjay Kumar, Deepa Joshi, 2017,** Fuzzy Ideal based Computational approach for group decision making problems, Fuzzy Information & Engineering, 9(2): 1–13.
15. **Dheeraj Kumar Joshi, Sanjay Kumar, 2017,** Trapezium cloud TOPSIS method with interval-valued intuitionistic hesitant fuzzy linguistic information, Granular Computing, 3(2), 139-152.
16. **Dheeraj Kumar Joshi, Sanjay Kumar, 2017,** Entropy of interval-valued intuitionistic hesitant fuzzy set and its application to group decision making problems, Granular Computing.
17. **Dheeraj Kumar Joshi, Ismat Beg, Sanjay Kumar, 2018,** Hesitant probabilistic fuzzy linguistic sets with applications in multi-criteria group decision making problems, Mathematics, 6(4), 47.
18. **Deepa Joshi, Sanjay Kumar, 2018**. Improved accuracy function for interval-valued intuitionistic fuzzy sets and its application to multi-attribute group decision making problems, Cybernetics & Systems: An international Journal, 49(1), 1-13.
19. **Veena Pandey, Sanjay Kumar, Shailesh Chandra Shankhdhar, Deepti Shankhdhar, 2018**, Economic yield prediction in six rice (Oryza sativa L.) genotypes by applying mamdani rule based fuzzy model, 55(1), 242-247.
20. **Krishna Kumar Gupta, Sanjay Kumar, 2018,** Hesitant probabilistic fuzzy set based time series forecasting model, Granular Computing. https://doi.org/10.1007/s41066-018-0126
21. **Akanksha Singh, Sanjay Kumar, 2018**, Dual hesitant fuzzy set and intuitionistic fuzzy ideal based computational method for MCGDM problems, International Journal of natural computing research, 7(3).
22. **Kamlesh Bisht, Sanjay Kumar, 2018,** Hesitant fuzzy set based computational method for financial time series forecasting, Granular Computing. https://doi.org/10.1007/s41066-018-00144-4
23. **Kamlesh Bisht, Sanjay Kumar, 2019,** Intuitionistic Fuzzy Set-Based Computational Method for Financial Time Series Forecasting, Fuzzy Information and Engineering, DOI: 10.1080/16168658.2019.1631557
24. **Krishna Kumar Gupta, Sanjay Kumar**, **2019**. A novel high-order fuzzy time series forecasting method based on probabilistic fuzzy sets. *Granular Computing* **4,** 699–713. https://doi.org/10.1007/s41066-019-00168-4
25. **Amit Saha, Kamlesh Naryan Singh, Mrinmoy Ray, Sanjay Kumar, Santosha Rathod, 2019,** A New Approach for Spatio- temporal Modelling and forecasting based on fuzzy techniques in conjunction with k -means clustering, Journal of the IndIan Society of agricultural Statistics, 73(2), 111-120.
26. **Akanksha Singh, Sanjay Kumar, 2020,** A novel dice similarity measure for IFSs and its applications in pattern and face recognition, Expert Systems with Applications, Volume 149, 1 July 2020, 113245.
27. **D.C. Pandey, G.S. Kushwaha, Sanjay Kumar.** Mamdani fuzzy rule-based models for psychological research. SN Applied Sciences. 2, 913 (2020). https://doi.org/10.1007/s42452-020-2726-z

28. **Akanksha Singh, Sanjay Kumar, 2020,** Picture fuzzy Choquet integral-based VIKOR for multicriteria group decision-making problems, Granular Computing, DOI: 10.1007/s41066-020-00218-2

29. **Akanksha Singh, Ismat Beg, Sanjay Kumar.** Analytic Hierarchy Process for Hesitant Probabilistic Fuzzy Linguistic Set with Applications to Multi-criteria Group Decision Making Method, Internation Journal of fuzzy System. (2020) 22(5):1596–1606

30. **Vaibhav Sharma, M.C. Joshi, Sanjay Kumar.** Fixed point theorems for contractive and weakly compatible mapping in complete intuitionistic fuzzy metric space. Journal of Analysis (2021). https://doi.org/10.1007/s41478-021-00317-6

31. **Manish Pant, Sanjay Kumar.** Particle swarm optimization and intuitionistic fuzzy set-based novel method for fuzzy time series forecasting. Granular Computing. (2021). https://doi.org/10.1007/s41066-021-00265-3

32. **Akanksha Singh, Sanjay Kumar.** "Picture fuzzy set and quality function deployment approach based novel framework for multi-criteria group decision making method." *Engineering Applications of Artificial Intelligence* 104 (2021): 104395.

33. **Manish Pant, Sanjay Kumar.** Fuzzy time series forecasting based on hesitant fuzzy sets, particle swarm optimization and support vector machine-based hybrid method. *Granular Computing* (2021). https://doi.org/10.1007/s41066-021-00300-3

34. **Krishna Kumar Gupta, Sanjay Kumar** (2022) K-Means Clustering Based High Order Weighted Probabilistic Fuzzy Time Series Forecasting Method, Cybernetics and Systems, DOI: 10.1080/01969722.2022.2058691

35. **Shivani Pant, Sanjay Kumar. (2022).** IFS and SODA based computational method for fuzzy time series forecasting. *Expert Systems with Applications*, *209*, 118213. https://doi.org/10.1016/j.eswa.2022.118213

36. **Makrand Dhyani, Govind Singh Kushwaha, Sanjay Kumar (2022).** A novel intuitionistic fuzzy inference system for sentiment analysis. *Int. j. inf. tecnol.* **14**, 3193–3200. https://doi.org/10.1007/s41870-022-01014-8

(B) In the refereed proceedings of International Conferences

1. **Sanjay Kumar, V.K. Srivastava, A.K. Shukla, S. Barthwal, R.C. Pant.** ”Application of Fuzzy Control to Response of Sugarcane to Periodical Water logging” In the Proceedings of International Conference of Cognitive Systems 1997.

2. **Sanjay Kumar, Rajeev Singh, Piyush Malviya, 2009**. "Backward fuzzy reasoning based production system for pulp and paper industry effluent", Proceeding of National Conference on Cutting Edge Computer and Electronics Technologies, 210-212.

3. **Joshi, B.P., Kumar, S. (2012).** A Computational Method of Forecasting Based on Intuitionistic Fuzzy Sets and Fuzzy Time Series. In: Deep, K., Nagar, A., Pant, M., Bansal, J. (eds) Proceedings of the International Conference on Soft Computing for Problem Solving (SocProS 2011) December 20-22, 2011. Advances in Intelligent and Soft Computing, vol 131. Springer, New Delhi. https://doi.org/10.1007/978-81-322-0491-6_91.

4. **Joshi, D., Kumar, S. (2015).** Conflicting Bifuzzy Preference Relations Based Method for Multi Criteria Decision Making Problems. In: Chakraborty, M.K., Skowron, A., Maiti, M., Kar, S. (eds) Facets of Uncertainties and Applications.

Springer Proceedings in Mathematics & Statistics, vol 125. Springer, New Delhi. https://doi.org/10.1007/978-81-322-2301-6_24.

5. **Gangwar, S.S., Kumar, S. (2015).** Computational Method for High-Order Weighted Fuzzy Time Series Forecasting Based on Multiple Partitions. In: Chakraborty, M.K., Skowron, A., Maiti, M., Kar, S. (eds) Facets of Uncertainties and Applications. Springer Proceedings in Mathematics & Statistics, vol 125. Springer, New Delhi. https://doi.org/10.1007/978-81-322-2301-6_22

6. **S. Devi, S. Kumar and G. S. Kushwaha (2016).** "An adaptive neuro fuzzy inference system for prediction of anxiety of students," *2016 Eighth International Conference on Advanced Computational Intelligence (ICACI)*, Chiang Mai, Thailand, 2016, pp. 7-13, doi: 10.1109/ICACI.2016.7449795.

7. **Gangwar, S. S., & Kumar, S. (2016, November).** Cumulative Probability Distribution Based Computational Method for High Order Fuzzy Time Series Forecasting. In *FSDM* (pp. 3-10).

8. **Joshi, D. K., Bisht, K., & Kumar, S. (2018).** Interval-valued intuitionistic uncertain linguistic information-based TOPSIS method for multi-criteria group decision-making problems. In *Ambient Communications and Computer Systems: RACCCS 2017* (pp. 305-315). Springer Singapore.

9. **Bisht, K., Joshi, D. K., & Kumar, S. (2018).** Dual hesitant fuzzy set-based intuitionistic fuzzy time series forecasting. In *Ambient Communications and Computer Systems: RACCCS 2017* (pp. 317-329). Springer Singapore.

10. **Joshi, D. K., & Kumar, S. (2017, October).** Computational approach for hesitant fuzzy group decision making problems. In *2017 4th IEEE Uttar Pradesh Section International Conference on Electrical, Computer and Electronics (UPCON)* (pp. 54-61). IEEE.

11. **Bisht, K., Dhyani, M., & Kumar, S. (2017, September).** An approach to handel nondeterminism in fuzzy time series forecasting by hesitant fuzzy sets. In *2017 3rd International Conference on Advances in Computing, Communication & Automation (ICACCA)(Fall)* (pp. 1-6). IEEE.

12. **Joshi, D., Kumar, S. (2018).** An Approach to Multi-criteria Decision Making Problems Using Dice Similarity Measure for Picture Fuzzy Sets. In: Ghosh, D., Giri, D., Mohapatra, R., Savas, E., Sakurai, K., Singh, L. (eds) Mathematics and Computing. ICMC 2018. Communications in Computer and Information Science, vol 834. Springer, Singapore. https://doi.org/10.1007/978-981-13-0023-3_13.

13. **Gupta, K.K., Kumar, S. (2019).** Fuzzy Time Series Forecasting Method Using Probabilistic Fuzzy Sets. In: Mandal, J., Bhattacharyya, D., Auluck, N. (eds) Advanced Computing and Communication Technologies. Advances in Intelligent Systems and Computing, vol 702. Springer, Singapore. https://doi.org/10.1007/978-981-13-0680-8_4

14. **Singh, A., Joshi, D.K., Kumar, S. (2019).** A Novel Construction Method of Intuitionistic Fuzzy Set from Fuzzy Set and Its Application in Multi-criteria Decision-Making Problem. In: Mandal, J., Bhattacharyya, D., Auluck, N. (eds) Advanced Computing and Communication Technologies. Advances in Intelligent Systems and Computing, vol 702. Springer, Singapore. https://doi.org/10.1007/978-981-13-0680-8_7

15. **K.K. Gupta, Sanjay Kumar**. (2020) Probabilistic Intuitionistic Fuzzy Set Based Intuitionistic Fuzzy Time Series Forecasting Method. In: Manna S., Datta B., Ahmad S. (eds) Mathematical Modelling and Scientific Computing with Applications. ICMMSC 2018. Springer Proceedings in Mathematics & Statistics, vol 308. Springer, Singapore. https://doi.org/10.1007/978-981-15-1338-1_23

16. **K.K. Gupta, Sanjay Kumar. (2022).** A Weighted Fuzzy Time Series Forecasting Method Based on Clusters and Probabilistic Fuzzy Set. In: Das, B., Patgiri, R., Bandyopadhyay, S., Balas, V.E. (eds) Modeling, Simulation and Optimization. Smart Innovation, Systems and Technologies, vol 292. Springer, Singapore. https://doi.org/10.1007/978-981-19-0836-1_28

17. **Garima Bisht, Sanjay Kumar. (2022)**. Fuzzy Rule-Based Expert System for Multi Assets Portfolio Optimization. In: Rushi Kumar, B., Ponnusamy, S., Giri, D., Thuraisingham, B., Clifton, C.W., Carminati, B. (eds) Mathematics and Computing. ICMC 2022. Springer Proceedings in Mathematics & Statistics, vol 415. Springer, Singapore. https://doi.org/10.1007/978-981-19-9307-7_27

18. **Shivani Pant, Sanjay Kumar. (2022).** Particle Swarm Optimization and Computational Algorithm Based Weighted Fuzzy Time Series Forecasting Method. In: Uddin, M.S., Jamwal, P.K., Bansal, J.C. (eds) Proceedings of International Joint Conference on Advances in Computational Intelligence. Algorithms for Intelligent Systems. Springer, Singapore. https://doi.org/10.1007/978-981-19-0332-8_2

19. **Laxmi Rajput, Sanjay Kumar (2022).** Novel Score Function and Accuracy Function for Spherical Linguistic Fuzzy Numbers and Their Application in Multi-criteria Decision-Making Problems. In: Shaw, R.N., Das, S., Piuri, V., Bianchini, M. (eds) Advanced Computing and Intelligent Technologies. Lecture Notes in Electrical Engineering, vol 914. Springer, Singapore. https://doi.org/10.1007/978-981-19-2980-9_5

20. **Laxmi Rajput, Sanjay Kumar. (2023).** Spherical Fuzzy Parameterized Soft Set-Based Multi-criteria Decision-Making Method. In: Mathur, G., Bundele, M., Tripathi, A., Paprzycki, M. (eds) Proceedings of 3rd International Conference on Artificial Intelligence: Advances and Applications. Algorithms for Intelligent Systems. Springer, Singapore. https://doi.org/10.1007/978-981-19-7041-2_38

21. **Makrand Dhyani, Sanjay Kumar, Govind Singh Kushwaha, G.S. (2023)**. Hesitant Fuzzy Sets Based TSK Model for Sentiment Analysis. In: Mathur, G., Bundele, M., Tripathi, A., Paprzycki, M. (eds) Proceedings of 3rd International Conference on Artificial Intelligence: Advances and Applications. Algorithms for Intelligent Systems. Springer, Singapore. https://doi.org/10.1007/978-981-19-7041-2_31