

List of Publications

1. Vaishaly Verma, **Pitam Singh**, "Fuzzy Harmonic Mean-Based Method for Solving Intuitionistic Fuzzy Multi-Objective Linear Fractional Optimization Problems and its Application in Organizational Planning" *Afrika Matematika*, (2026), (Accepted) (**Springer**).
2. Km Soni, **Pitam Singh** Shubhankar Kumar "Dynamic adaptive large neighborhood search approach for the uncertain multi-objective green vehicle routing problem" *Applied Soft Computing*, 199 (2026) 115323 (**Elsevier**)
3. Anesh Kumar, **Pitam Singh**, "Hesitant fuzzy programming strategies for solving multi-objective neutrosophic fractional stochastic transportation problem" *Engineering Applications of Artificial Intelligence*, 176(2026) 114688 (**Elsevier**)
4. Bharat Kumar, Mukesh Kumar, **Pitam Singh**, Priyamvada Singh "Multi-criteria decision analysis for locating electric vehicle charging stations using GIS & remote sensing" *Case Studies on Transport Policy*, 24(2026), 101806 (**Elsevier**).
5. Praveen Kumar Nirala, Mukesh Kumar, **Pitam Singh**, Priyamvada Singh, and Bharti Das "Route Alignment Selection and Planning for Ganga Express Way from Meerut to Prayagraj Region Based on Multi-Criteria Decision Analysis Techniques with Geographic Information Systems and Remote Sensing Techniques" *Chinese Journal of Urban and Environmental Studies*, 13(2) (2025), (**World Scientific Press**).
6. Anesh Kumar, **Pitam Singh** "Exponential neutrosophic programming contrivance in multiple criteria for type-2 uncertain multi-objective transportation problem" *Engineering Applications of Artificial Intelligence*, 143(2025), 109903 (**Elsevier**).
7. Vaishaly Verma, **Pitam Singh** "A Survey on Generalized Fuzzy Parameter based Fractional Programming Problem" *New Mathematics and Natural Computation* (2025) 1–40 (**World Scientific Press**).
8. Kumar Santosh, **Singh Pitam**, Das Bharti, Gaur Monika, Singh Priyamvada "A Comparative Study of Unsupervised Machine Learning Algorithm for Recognition of Change in vegetation, Water and Built up Land Areas, *Disaster Advances*, 18(4) (2025) 1-8.
9. Mukesh Kumar, **Pitam Singh**, Priyamvada Singh "Analytical Hierarchy process and geospatial techniques for Delineation of Groundwater potential zones in Bundelkhand Craton Region, India" *Applied Geomatics*, 16(2024), 973-986 (**Springer**)

10. Mukund Pratap Singh, **Pitam Singh**, Priyamvada Singh "Multi-criteria Decision Analysis for Route Alignment Planning Using Geographical Information System (GIS) and Analytical Hierarchy Process (AHP)" *Chinese Journal of Urban and Environmental Studies*, 12(1) (2024), 2450006 (**World Scientific Press**).
11. Vaishaly Verma, **Pitam Singh**, "Neutrosophic Linear Fractional Optimization Problem using Fuzzy Goal Programming Approach" *International Journal of Modeling, Simulation and Scientific Computing*, Vol. 15(3)(2024), 2450027 (**World Scientific Press**).
12. Yadvendra Kacher, **Pitam Singh** "A generalized parametric approach for solving different fuzzy parameter based multi-objective transportation problem, *Soft Computing*, 28(2024), 3187–3206(**Springer**)
13. Anesh Kumar, **Pitam Singh**, Yadvendra Kacher "Neutrosophic Hyperbolic Programming Approach for Multi-objective Uncertain Transportation Problem" *Applied Soft Computing* 149(2023) 110949 (**Elsevier**)
14. Mukesh Kumar, **Pitam Singh**, Priyamvada Singh "Machine Learning and GIS-RS based Algorithms for Mapping of the Groundwater Potentiality in the Bundelkhand Region, India" *Ecological Informatics*, 74(2023), 1-18, 101980 (**Elsevier**).
15. Deepika Agarwal, **Pitam Singh**, M.A. EL Sayed "The Karush-Kuhn-Tucker (KKT) optimality conditions for fuzzy-valued fractional optimization problems" *Mathematics and Computers in Simulation*, 205 (2023), 861-877 (**Elsevier**).
16. Yadvendra Kacher, **Pitam Singh** "Fuzzy Harmonic Mean Technique for Solving Fully Fuzzy Multi-objective Transportation Problem" *Journal of Computational Science*, 63(2022) 101782, (**Elsevier**).
17. Mukesh Kumar, **Pitam Singh**, Priyamvada Singh "Integrating GIS and remote sensing for delineation of groundwater potential zones in Bundelkhand region, India" *Egyptian Journal of Remote Sensing and Space Sciences*, 25(2022), (**Elsevier**).
18. Deepika Agarwal, **Pitam Singh**, "Riemann integrability based optimality criteria for fractional optimization problems with fuzzy parameters" *Iranian Journal of Fuzzy Systems*, 19(2)(2022), 151-168 (**Publisher: University of Sistan and Baluchestan**).
19. Mukesh Kumar, **Pitam Singh**, Priyamvada Singh "Fuzzy AHP based GIS and Remote Sensing Techniques for the Groundwater Potential Zonation for Bundelkhand Craton Region, India" *Geocarto International* *Geocarto International*, 37(22)(2021), 6671–6694 (**Taylor & Francis**).

20. Yadvendrakacher, **Pitam Singh** "A Comprehensive Literature Review on Transportation Problems" *International Journal of Applied and Computational Mathematics*, 7(5)(2021) (**Springer**).
21. Priyamvada Singh, Mariya Hasnata, Madhusudana N. Rao, **Pitam Singh** "Fuzzy analytical hierarchy process based GIS modelling for groundwater prospective zones in Prayagraj, India", *Groundwater for Sustainable Development*, 12(2021)(100530) (**Elsevier**).
22. Sushil Kumar, Priyamvada Singh, Rama Sushil, **Pitam Singh**, Anil Tiwari "Microtremor measurement to evaluate site characteristics by horizontal to vertical spectral ratio technique in Sikkim, Northeast Himalayas, India" *Quaternary International*, 585(2021) (**Elsevier**).
23. Ouyang Zhao, Xuchong Liu, Xiong Li, **Pitam Singh**, Fan Wu " Privacy-preserving data aggregation scheme for edge computing supported vehicular ad hoc networks, *Transactions on Emerging Telecommunications Technologies*, (2020) (**Wiley**)
24. M.A. El Sayed, Ibrahim A Baky, **Pitam Singh** "A modified TOPSIS approach for solving stochastic fuzzy multi-level multi-objective fractional decision making problem" *OPSEARCH*, 57(4)(2020), 1374-1403 (**Springer**)
25. **Pitam Singh**, Deepika Agarwal, Deepak Bhati, R. N. Mohapatra "A Branch–Bound Cut Technique for Non-linear Fractional Multi-objective Optimization Problems" *International Journal of Applied and Computational Mathematics*, (2020) (**Springer**).
26. Xialiang Wang, Liang Bai, Brandon Mausler, **Pitam Singh** "A Novel Conditional Anonymity Scheme for Vehicular Communication Networks" *International Journal of Communication System*, ISSN: 1099-1131 (2019)<https://doi.org/10.1002/dac.4130> (**Wiley**).
27. Rubi Arya, **Pitam Singh**, Saru Kumari, Mohammad S. Obaidat "An approach for solving fully fuzzy multi-objective linear fractional optimization problems" *Soft Computing*, ISSN: 1432-7643 (print version) SSN: 1433-7479 (electronic version) DOI: 0.1007/s00500-019-04442-0, (2019) (**Springer**)
28. Mukund Pratap Singh, **Pitam Singh**, Priyamvada Singh "Fuzzy AHP based Multi-criteria Decision Making Analysis for Route Alignment Planning using Geographical Information System (GIS)" *Journal of Geographical Systems* 21, 395-432 (2019) ISSN: 1435-5930 (print version) ISSN: 1435-5949 (**Springer**).
29. Rubi Arya, **Pitam Singh**, "Fuzzy efficient iterative method for multi-objective linear fractional programming problems" *Mathematics and Computers in Simulation* 160 (2019). 39-54 (**Elsevier**)
30. Deepika Agarwal, **Pitam Singh**, Deepak Bhati, Saru Kumari, Mohammad S. Obaidat "Duality based branch-bound computational algorithm for sum-of-linear fractional multi-objective

optimization problem” *Soft Computing*, ISSN: 1432-7643 (print version) SSN: 1433-7479 (electronic version) 23(1) 197–210 **(2019) (Springer)**

31. Majid Bayat, Zahra Zare Jousheghani, Ashok Kumar Das, **Pitam Singh**, Saru Kumari, Mohammad Reza Aref “ A lightweight Privacy-preserving Authenticated Key Exchange Scheme for Smart Communications, *The ISC International Journal of Information Security*, 11(2), 1-16 (2019)
32. Deepika Agarwal, **Pitam Singh**, Xiong Li, SaruKumari, “Optimality Criteria for Fuzzy-Valued Fractional Multi-objective Optimization Problem” *Soft Computing*, ISSN: 1432-7643 (print version) SSN: 1433-7479 (electronic version), 10.1007/s00500-018-3508-z **(2018)(Springer)**
33. Sushil Kumar, Priyamvada Singh, **Pitam Singh** “Estimation of scattering and intrinsic attenuation based on multiple lapse time window analysis in Sikkim Himalayan region, India” *Physics of the Earth and Planetary Interiors*, ISSN: 0031-9201, 284**(2018)**, 1-9.**(Elsevier)**
34. Priyamvada Singh, Sushil Kumar, **Pitam Singh** “Attenuation of short-period body waves in Northwestern Himalayan Region, India” *Soil Dynamics and Earthquake Engineering*, ISSN: 0267-7261, 114, 555-562 **(2018)(Indexed in: SCI) (Elsevier)**.
35. **Pitam Singh**, Ashish Kumar Singh, Priyamvada Singh, Saru Kumari, Arun Kumar Sangaiah, “Multimodal data modelling for efficiency assessment of social priority based urban bus route transportation system using GIS and data envelopment analysis”, *Multimedia Tools and Applications*, ISSN: 1380-7501 (print version) ISSN: 1573-7721 (electronic version) (Published on line) **(2018)(Springer)**
36. Deepak Bhati, **Pitam Singh** “Multi-objective nonlinear sum of fractional optimization problems with non-convex constraints using duality based branch and bound algorithm” *Ukrainian Mathematical Journal*, ISSN: 0041-5995 (print version), 1573-9376 (electronic version), 69(11), 1689-1709 **(2018) (Springer)**
37. Rubi Arya, **Pitam Singh** & Deepak Bhati “A fuzzy based branch and bound approach for multi-objective linear fractional (MOLF) optimization problems” *Journal of Computational Science*, ISSN: 1877--7503, 24, 54-64 **(2018) (Elsevier)**.
38. Singh Priyamvada, Hasnat Mariya, **Singh Pitam** “Fuzzy Criteria based Recognition of Groundwater Prospective Zones using GIS and Remote Sensing” *Disaster Advances* E-ISSN 2278-4543; PRINT-ISSN 0974-262X 11(8), 1-10 (2018).
39. Mukund Pratap Singh, **Pitam Singh** “Multi-criteria GIS Modeling for optimum route alignment planning in outer region of Allahabad City, India, *Arab. J. Geosci.***(2017)** 10:294 DOI 10.1007/s12517-017-3076-z , **141.(Springer)**

40. **Pitam Singh**, Saru Kumari & Priyamvada Singh “Fuzzy efficient interactive goal programming approach for multi-objective transportation problems” *International Journal of Applied and Computational Mathematics*, 3(2), 505-525 (2017), ISSN: 2349-5103, (Springer).
41. Rubi Arya, **Pitam Singh** “Fuzzy parametric iterative method for multi-objective linear fractional optimization problems” *Journal of Intelligent and Fuzzy Systems*, ISSN: 1064-1246(Print), 1875-8667(online), 32, 421-433 (2017) (IOS Press)
42. Deepak Bhati, **Pitam Singh** & Rubi Arya “A taxonomy and review of the multi-objective fractional programming (MOFP) problems” *International Journal of Applied and Computational Mathematics*, 3(3), 2695-2717 (2017), ISSN: 2349-5103 (Springer).
43. Deepak Bhati, **Pitam Singh** “Branch and bound computational method for multi-objective linear fractional optimization problem” *Neural Computing and Applications*, 28(11), 3341-3351 (2017), ISSN: 0941-0643 (Print) 1433-3058 (Online) (Springer).
44. Sushil Kumar, Priyamvada Singh, **Pitam Singh**, Shubhasmita Biswal, Mahesh Prasad Parija “Frequency dependent attenuation characteristics of coda waves in the northwestern Himalayan (India) region” *Journal of Asian Earth Sciences*, 117, 337-345 (2016), ISSN: 1367-9120. (Elsevier)
45. Rubi Arya, **Pitam Singh**, "On fuzzy multi-objective linear fractional programming problems" *Proceedings of the World Congress on Engineering*, 2016, Pages: 105-109.
46. Deepak Bhati, **Pitam Singh** “Optimality criteria for sum of fractional multi-objective optimization problem with generalized invexity” *Turkish Journal of Mathematics*, 39, 900-912 (2015), ISSN: 1300-0098(Print), 1303-6149(online), (Academic Journal published by the Scientific & Technological Research Council of Turkey).
47. Long Shree, **Pitam Singh**, D.C. Sharma, P. Jharotia “Mathematical modeling and performance analysis of machine repairable system with hot spares” *Proceedings of the National Academy of Sciences, India Section A: Physical Sciences*, 85(1), 127- 135(2015). ISSN: 0369-8203(print), 2250-1762(online).(Springer)
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Operational Research, 6(3), 357-376 (2014). ISSN: 1757-5869 (Print), 1757-5869(online) (Inderscience).

50. Khurram Khan, Saru Kumari, **Pitam Singh** "Cryptanalysis of an efficient-strong authentication protocol Mohammad (F-SAP) for health care application using wireless medical sensor networks" *KSII Transaction on Internet and Information Systems*, 7(5), 967-979 (2013). (ISSN: 1976-7277).
51. D. Dutta, **Pitam Singh**, Shiv Datt Kumar, R.K. Singh, "A Solution of Linear-plus Linear Fractional Multi-objective Programming Problem" *International eJournal of Mathematics and Engineering*, 209(2013) 2056-2064.
52. **Pitam Singh**, "Multi-objective linear fractional programming: A fuzzy efficient interactive goal programming method" 2013 International Conference on Fuzzy Theory and Its Applications (iFUZZY) page: 258-263, Publisher: IEEE.
53. **Pitam Singh**, D.Dutta "Sum of linear ratio multiobjective programming problem: a fuzzy goal programming approach" *Nonlinear Dynamics and System Theory*, 12(3), 289-302(2012). ISSN: 1562-8353(Print), 1813-0738(online) (Informath Publishing Group).
54. **Pitam Singh**, Shiv Datt Kumar, R.K. Singh "Fuzzy multi-objective linear plus linear fractional programming problem: approximation and goal programming approach" *International Journal of Mathematics and Computers in Simulation*, 5(5), 395-404 (2011). ISSN: 1562-8353(Print), 1813-0738(online). (NUAN Journal).
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56. **Pitam Singh**, Shiv Dutt Kumar, R. K. Singh "Fuzzy goal programming approach to multiobjective linear plus linear fractional programming problem" *WSEAS Proceedings of American Conference on Applied Mathematics Puerto Morelos*, 29-01-2011.
57. **P. Singh**, S.D. Kumar, R.K. Singh, "An approach for multiobjective linear plus linear fractional programming problem", *International Electronic Journal of Pure and Applied Mathematics*, 2 (3) (2010), 103-110.
58. **Pitam Singh**, Shiv Dutt Kumar, R.K. Singh, "Fuzzy efficient and pareto-optimal solution for multiobjective linear plus linear fractional programming problem" *IEEE 2010 International Conference on Computer and Communication Technology (ICCCT)*, Page: 536-543, Publisher: IEEE.