

Dr. Harendra Kumar
Department of Mathematics & Statistics
Gurukula Kangri (Deemed to be University)
Haridwar-249 404, Uttarakhand, INDIA
Email: harendra.kumar@gkv.ac.in, balyan.kumar@gmail.com

1. Designation : Assistant Professor (Level 12)
2. Teaching Experience: 16Years
3. Academic Qualification : M.Sc., Ph.D.
NET (UGC-JRF)-December 2003, NET(CSIR-JRF)-June 2005,GATE-2004
Ph.D thesis title: **Modeling and Simulation of Performance Analysis of Distributed Real Time System**, Gurukula Kangari Vishwavidyalaya, Haridwar (Uttarakhand) India (2008)
4. Administrative Experience: Assistant Controller of Examination, Gurukula Kangri (Deemed to be University), December 2022 to till date.
5. Fellowship received:

S.No	Name of Award	Awarding Agency	Year
1.	JRF	UGC	2005-2008

6. **No. of Dissertation Guided at P.G. Level: 06**
7. **Ph.D. Guidance:**

S.No.	Name of Student	Title of Thesis	Year
1.	Nutan Kumari Chauhan	Development of Some Tasks Scheduling Algorithms for the Performance Analysis of Distributed Real Time System under Fuzzy Environment.	(June 2018). Viva-Voice (01-01.2019)
2.	Pankaj Kumar	Modelling and Simulation of Flow Shop Scheduling: A Fuzzy Genetic Approach	(June 2019). Viva-Voice (23.01.2020)
3.	Shailendra Giri	A Study on Flow Shop Scheduling through Soft Computing Techniques	(August 2019) Viva-Voice (25-06.2020)
4.	Isha Tyagi	Performance Analysis and Modelling based Scheduling of Tasks in Distributed Real Time System	(August 2020) Viva-Voice 30.07.2021
5.	Niteesh Kumar	Development of Some Efficient Clustering Algorithms for Big Data	(August 2023)
6.	Karishma	Development of some computationally intelligence Tasks scheduling algorithms for distributed real time System	(January 2025)

(a) **Ph.D. Thesis Supervised: 06**

(b) **Ph.D. Students Enrolled: 04**

7. **Publications : (In year wise descending order).**

1. Karishma, Harendra Kumar, GWO Based Energy-Efficient Workflow Scheduling for Heterogeneous Computing Systems, Soft Computing, 2025 (Accepted) (**Scopus, I.F. 3.7**)
2. Karishma, Harendra Kumar. A novel hybrid model for task scheduling based on particle swarm optimization and genetic algorithms, Mathematics in Engineering, 2024, 6(4): 559-606. doi: 10.3934/mine.2024023 (**Scopus, SCIE, I.F. 1,4**)
3. Kumar, A. and Kumar, H. (2024) ‘A hybrid soft computing technique by using fuzzy Petri nets to optimise the critical path in management problem’, Int. J. Applied Systemic Studies, Vol. 11, No. 4, pp.278–297. (**Scopus**)
4. Vikash Patel, Harendra Kumar, Ashu Redhu,, Kamal Kumar, Multiattribute decision-making based on TOPSIS technique and novel correlation coefficient of q-rung orthopair fuzzy sets. Granul. Comput. 9, 74 (2024). <https://doi.org/10.1007/s41066-024-00493-3> (**Scopus**)

5. Niteesh Kumar, Harendra Kumar, Dipa Sharma , Hybrid fuzzy clustering technique to enhance the performance based on a fusion of intuitionistic modified fuzzy c-means and improved genetic algorithm” International Journal of Data Science and Analytics, 2023, <https://doi.org/10.1007/s41060-023-00474-w> (**Scopus**, **I.F. 3.4**)
6. Karishma, Harendra Kumar” A new hybrid particle swarm optimization algorithm for optimal tasks scheduling in distributed computing system”, Intelligent Systems with Applications, Volume 18, 2023, 200219 (**Scopus**)
7. Harendra Kumar , Shailendra Giri, “A hybrid two-stage algorithm for solving the blocking flow shop scheduling problem with the objective of minimise the makespan” International Journal of Applied Management Science, Vol 14 (4), pp 316-335 (2022) (**Scopus**) (**I.F. 0.7**)
8. Niteesh Kumar, Harendra Kumar, “A fuzzy clustering technique for enhancing the convergence performance by using improved Fuzzy c-means and Particle Swarm Optimization algorithms”, Data & Knowledge Engineering, Vol: 140, Page: 1020-50 (2022)(**SCI**) (**I.F. 2.5**)
9. Niteesh Kumar, Harendra Kumar, Kamal Kumar, "A Study for Plausible Third Wave of COVID-19 in India through Fuzzy Time Series Modelling Based on Particle Swarm Optimization and Fuzzy c-Means", *Mathematical Problems in Engineering*, vol. 2022, Article ID 5878268, 22 pages, 2022. <https://doi.org/10.1155/2022/5878268> (**Scopus**) (**I.F. 1.430**)
10. Chauhan, N.K., Tyagi, I., Kumar, H. *et al.* Tasks Scheduling Through Hybrid Genetic Algorithm in Real-Time System on Heterogeneous Environment. *SN COMPUT. SCI.* **3**, 75 (2022). <https://doi.org/10.1007/s42979-021-00959-0> (**Scopus**)
11. N.Kumar and H.Kumar ,”A novel hybrid fuzzy time series model for prediction of COVID-19 infected cases and deaths in India”, ISATransactions (2021) ,<https://doi.org/10.1016/j.isatra.2021.07.003>.(**Scopus**) (**I.F. 7.3**)
12. Harendra Kumar and Isha Tyagi, “A New Hybrid Optimization Technique for Scheduling of Periodic and Non-periodic Tasks”, Augmented Human Research, Vol 6(1), 2021, **DOI** : 10.1007/s41133-021-00049-z (**Scopus**)
13. Harendra Kumar, Shailendra Giri, “A New approach for Solving the Flow Shop Scheduling Problem through Neural Network Technique with Known Breakdown Time and Weights of Jobs”, International Journal of Service Science, Management, Engineering , and Technology, Vol. 12(1), 2021, ISSN:1947959X, DOI: 10.4018/IJSSMET.2021010105 (**Scopus**)
14. Harendra Kumar, Isha Tyagi, “A Tasks Allocation Model Based on Fuzzy Hierarchical Clustering and Study of Impact of Different Distance Measures on the Performance of Model”, International Journal of Fuzzy System Applications, Vol.9(4), 2020, ISSN: 2156-177X , DOI: 10.4018/IJFSA.2020100105 (**Scopus**)
15. Harendra Kumar, Isha Tyagi, “Hybrid model for tasks scheduling in distributed real time system”. Journal of Ambient Intelligence and Humanized Computing (2020). <https://doi.org/10.1007/s12652-020-02445-6> (**Scopus**) (**I.F. 3.662**)
16. Harendra Kumar, Shailendra Giri , “A neural network-based algorithm for flow shop scheduling problems under fuzzy environment”, International journal Process Management and Benchmarking, Vol. 10(2), pp.282–296, 2020, ISSN: 1741-816X, Doi: 10.1504/IJPMB.2020.106144 (**Scopus**)
17. Harendra Kumar, Shailendra Giri, “Optimisation of makespan of a flow shop problem using multi layer neural network”, International Journal of Computing Science and Mathematics, Vol. 11(2), pp.107–122, 2020, ISSN: 1752-5063, Doi: 10.1504/IJCSM.2020.10028046 (**Scopus**) (**I.F. 0.8**)
18. Niteesh Kumar, Harendra Kumar, Kuldeep Sharma “Extension of FCM by introducing new distance metric”., *SN Applied Science* , Vol. 2(4) (714) pp.1-21 ,2020, ISSN: 2523-3971, Doi:10.1007/s42452-020-2417-9 (**Scopus**)(**I.F.2.6**)
19. Harendra Kumar, Pankaj Kumar, Manisha Sharma, “A Genetic Algorithm for a Flow Shop Scheduling Problem with Breakdown Interval, Transportation Time and Weights of Jobs”, International Journal of Operational Research, Vol. 35(4), pp.470-483,2019, ISSN: 1745-7653, Doi: 10.1504/IJOR.2019.10022810 (**Scopus**)
20. Harendra Kumar, Pankaj Kumar, Manisha Sharma, “Solving Flow Shop Scheduling Problems with Blocking by using Genetic Algorithm”, International Journal of Applied Logistics, vol. 9(2), pp.20-38,2019,ISSN:1947-9573, Doi:10.4018/IJAL.2019070102 (**Scopus**)
21. Harendra Kumar, Isha Tyagi, “Implementation and Comparative Analysis of k-means and Fuzzy c-means Clustering Algorithms for Tasks Allocation in Distributed Real Time System”, International Journal of Embedded and Real-Time Communication Systems, vol.10(2), pp.66-86, 2019,ISSN: 1947-3176, Doi: 10.4018/IJERTCS.2019040105 (**Scopus**)
22. Harendra Kumar, Shailendra Giri, “A Flow Shop Scheduling Algorithm based on Artificial Neural Network” Bulletin of Pure & Applied Sciences-Mathematics, Vol.38E(1), pp.62-71, 2019, ISSN: 2320-3226, Doi:10.5958/2320-3226.2019.00007.9 (**UGC Approved**)
23. Harendra Kumar, Nutan Kumari Chauhan, Pradeep Kumar Yadav, “Hybrid Genetic Algorithm for Task Scheduling in Distributed Real-Time System”, International Journal of Systems, Control and Communications, Vol. 10(1),pp. 32-51,2019, ISSN: 1755-9359,Doi: 10.1504/IJSCC.2019.097417 (**Scopus**)
24. Harendra Kumar, Nutan Kumari Chauhan, Pradeep Kumar Yadav, A High Performance Model for Task Allocation in Distributed Computing System Using K-Means Clustering Technique”, International Journal of Distributed Systems and Technologies, Vol.9(3), pp.1-23,2018,ISSN:1947-3532, Doi:10.4018/IJDST.2018070101 (**Scopus**)
25. Harendra Kumar, Pankaj Kumar, Manisha Sharma, “An Effective New Hybrid Optimization Algorithm for Solving

Flow Shop Scheduling Problems”, Malaya Journal of Matematik, Vol. S(1), pp.107-113, 2018, ISSN: 2319-3786, Doi: 10.26637/MJM0S01/19 (**UGC Approved**)

26. Harendra Kumar, Nutan Kumari Chauhan, Pradeep Kumar Yadav, “A Task Allocation Model for Minimising System Cost and Maximising Reliability of Distributed Computing System”, International Journal of Communication Networks and Distributed Systems, Vol.20(2), pp.226-243, 2018, ISSN: 1754-3924, Doi: 10.1504/IJCND.2018.089767 (**Scopus**) (**I.F. 1.3**)
27. Harendra Kumar, Pankaj Kumar, Manisha Sharma, “A Heuristic Genetic Algorithm for Bi-Criteria Flow Shop Scheduling with Fuzzy Processing Time and Due Time”, Bulletin of Pure & Applied Sciences-Mathematics, Vol. 36E(2), pp.101-111,2017, ISSN: 2320-3226, Doi: 10.5958/2320-3226.2017.00013.3 (**UGC Approved**)
28. Harendra Kumar, Nutan Kumari Chauhan, Pradeep Kumar Yadav, “Dynamic Tasks Scheduling Algorithm for Distributed Computing Systems under Fuzzy Environment”, International Journal of Fuzzy System Applications, Vol.5(4), pp.77-95, 2016, ISSN: 2156-177X, Doi: 10.4018/IJFSA.2016100104 (**Scopus**)
29. Harendra Kumar, “A Heuristic Model for Tasks Scheduling in Heterogeneous Distributed Real Time System under Fuzzy Environment”, International Journal of Computer Applications, Vol.111 (2),pp. 35-43, 2015, ISSN: 0975-8887 (**UGC Approved**)
30. Harendra Kumar, Nutan Kumari Chauhan, Pradeep Kumar Yadav, “Fuzzy Inference System Based Model for Reliability Optimization in Distributed Computing Systems”, International Journal of Mathematical Sciences, Vol. 13(1-2), pp. 121-137,2014, ISSN: 0972-754X. (**UGC Approved**)
31. Harendra Kumar, Mahipal Singh, Pradeep Kumar Yadav, “Optimal Tasks Assignment for Multiple Heterogeneous Processors with Dynamic Re-assignment”, International Journal of Computers & Technology, Vol.4 (2), pp. 528-535, 2013, ISSN: 22773061 , Doi: 10.24297/ijct.v4i2b2.3313 (**Peer reviewed**)
32. Harendra Kumar, Mahipal Singh, Pradeep Kumar Yadav, “A Tasks Allocation Model with Fuzzy Execution and Fuzzy Inter-Tasks Communication Times in a Distributed Computing System”, International Journal of Computer Applications, Vol. 72(12), pp.24-31,2013, ISSN: 0975-8887 (**Peer reviewed**)
33. Manisha Sharma, Harendra Kumar, Deepak Garg, “An Optimal Task Allocation Model Through Clustering with Inter-Processor Distances in Heterogeneous Distributed Computing Systems”, International Journal of Soft Computing and Engineering ,Vol. 2(1), pp.50-55, 2012, ISSN: 2231-2307 (**Peer reviewed**)
34. Avinash Gaur, Harendra Kumar, “Multi- Objective Programming Approach in Bank Investment Planning”, International Journal of Mathematical Sciences, Vol. 9(1-2), pp. 151-159, 2010, ISSN: 0972-754X. (**UGC Approved**)
35. Mahipal Singh, Harendra Kumar, Pradeep Kumar Yadav, “Priority Based Tasks Allocation for Load Balancing in Distributed Computing Environment”, Pacific Asian Journal of Mathematics, Vol.3.(1-2),pp.153-62, 2009, ISSN: 0973-5240 (**Peer reviewed**)
36. Harendra Kumar, Mahipal Singh, Paradeep Kumar Yadav, “Task Allocation Model for Optimal Utilization of Processor’s Capacity in Distributed system”, International Journal of Mathematical Sciences and Engineering Applications, Vol.3, No. IV, pp. 389-394, 2009, ISSN: 0973-9424 (**Peer reviewed**)
37. Pradeep Kumar Yadav, Mahipal Singh, Harendra Kumar, “Scheduling Algorithm: Tasks Scheduling Algorithm for Multiple Processors with Dynamic Reassignment”, Journal of Computer Systems, Networks, and Communications, Vol. 208, pp.1-9, 2008, ISSN: 20907141, 2090715X, Doi: 10.1155/2008/578180V (**Scopus**)
38. Mahipal Singh, Harendra Kumar, Pardeep Kumar Yadav, “Scheduling of Communicating modules of Periodic Tasks in Distributed Real-Time Environment”, International Journal of Applied Mathematics & Engineering Sciences, Vol.2(2), pp.193-200, 2008, ISSN:09735275 (**Peer reviewed**)

8. Paper Published in Conference Proceeding:

1. Mahipal Singh, Pardeep Kumar Yadav, Harendra Kumar, Babita Agarwal, “Dynamic Tasks Scheduling Model for Performance Evaluation of a Distributed Computing System through Artificial Neural Network”, Proceedings of the International Conference on Soft Computing for Problem Solving (SocProS 2011) (Advances in Intelligent and Soft Computing: Published by **Springer**), Vol.130, pp. 321-331, 2012, ISSN:18675662, Doi: 10.1007/978-81-322-0487-9_31 (**Scopus**)

9. Books/Reports/Chapters/General articles etc. (07)

S.No.	Title	Publisher	Year of Publication
1.	Chapter: A Survey of Tasks Scheduling Algorithms in Distributed Computing Systems Book: Encyclopedia of Information Science and Technology, Fifth Edition, pp.233-244, DOI: 10.4018/978-1-7998-3479-3.ch018	IGI-Global USA, ISBN: 9781799834793	2020

2.	Chapter: GA-Based Task Scheduling Algorithm for Efficient Utilization of Available Resources in Computational Grid, Book: Decision Science in Action. Asset Analytics (Performance and Safety Management), pp.119-126 Doi: 10.1007/978-981-13-0860-4_9	Springer, Singapore, ISBN: 978-981-13-0859-8,	2019
3.	Chapter: A Review on Some Clustering Algorithms Book: Emerging Trends and Applications in Cognitive Computing, Chapter-09, pp.198-223, Doi: 10.4018/978-1-5225-5793-7.ch009	IGI-Global USA, ISBN: 9781522557937	2019
4.	Chapter: Computational Intelligence Approach for Flow Shop Scheduling Problem Book: Handbook of Research on Emergent Applications of Optimization Algorithms ,Chapter-13, pp-298-313, , Doi: 10.4018/978-1-5225-2990-3.ch013	IGI-Global USA, ISBN: 9781522529910	2018
5.	Chapter: Some Recent Defuzzification Methods Book: Theoretical and Practical Advancements for Fuzzy System Integration, Chapter-2, pp.31-48 , Doi: 10.4018/978-1-5225-1848-8.ch002 (Scopus)	IGI-Global USA, ISBN: 9781522518488	2017
6.	Book: Differential Calculus	Sara Book Publication, Ahmedabad, ISBN: 978-1-63040-0833-6	2016
7.	Book: Engineering Mathematics-III	Paragon International Publisher, Delhi, ISBN: 978-81-89253-40-0	2009

11. **Paper Presented in Seminar/ Conferences: 12**
12. **Workshop/ Orientation Program/ Refresher Course Attended: 13**
13. **Guest Editor:** Topic: Exploring the Integration of Artificial Intelligence and Big Data in HPC Systems.
Journal: Frontier of High Performance Computing

(Dr. Harendra Kumar)