

Prof.(Dr.) Rakesh K Bajaj



Contact Details

• Address:

Professor & HoD
Department of Mathematics,
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Technology, Waknaghat, Solan, HP, INDIA

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Research Interests

Fuzzy Information Measures, Decision
Making, Soft Computing Techniques

PhD Supervised

• 6 PhDs Awarded & 2 Enrolled

Awarded:

[One on March 27, 2014 (JUIT), One on May 28, 2015 (JUIT), One on Feb 23, 2015 (Ext), one on Feb 29, 2016 (Ext), one on 4 Dec 2020 (JUIT), One on 20 Aug 2022].

Enrolled:

Mr Himanshu (2021) & Ms Monika (2022)

Subjects Taught

- Engineering Mathematics I
- Engineering Mathematics II
- Discrete Mathematics, Graph Theory
- Probability Theory & Random Processes
- Probability and Statistics
- Numerical Methods
- Advanced Linear Algebra
- Research Methodology

Students Feedback

At the end of the semester, university takes the feedback from the students where an **average score of 8.5/10** has been awarded almost each semester.

Personal Information

Date of Birth: 22/02/1980

Family : Mother, Wife & Two Daughters

Campus Address: B2/5, Malviya Bhawan, JUIT

Permanent Address:

Flat No. 301, Gharounda Apartment, Dangra
Toli Chowk, Ranchi – 834001, Jharkhand, INDIA

Objective

To serve in university setup which would provide me a platform to enhance the teaching, research & administrative skills and utilize them for making the education relevant for holistic growth of students & society.

Academic Experience

Joined Jaypee University of Information Technology, Waknaghat, Solan, H.P. on **1st May 2003** & have around **20 Yrs of teaching experience**.

Educational Qualifications

- **Ph.D. (Maths)**– Jaypee University of Information Technology, Waknaghat, **Date of Award:** 6 Feb 2009.
- Qualified **NET-JRF** conducted by CSIR & UGC in **June 2002**.
- Qualified **GATE 2003** with **96.80** percentile (**AIR – 43**)
- **M.Sc. (Maths), CPI- 8.5/10** Indian Institute of Technology, Kanpur, INDIA
- **B.Sc. (Maths Hons.) 88.9% in (2000) Gold Medal – R B Munshi Shiva Prasad,** Banaras Hindu University, Varanasi, India.

Research Experience

- No. of **SCI/SCIE with IF Indexed papers:** 29
- No. of **Web of Science/ESCI/Scopus Journal papers:** 10
- No. of **Scopus Journal Paper Publications:** 14
- No. of **Scopus Conference Publications:** 18
- No. of **MathSciNet/Other peer reviewed papers:** 17
- **Total No of Research Papers Publications:** **88**
- **No of ABDC Journal Papers** **3 (A Rating)**
- **Google Scholar – H-index: 15 ; i10-index: 21; Citations: 962 (Dec 2023)**
- **Books Published:** 3
 - "Advances in Energy Aware Computing and Communication Systems", **McGraw Hill Education**, New Delhi.
 - "Spherical Fuzzy Information and Graphs with Soft Computing Applications", **Narosa Publication House**, New Delhi

Awards/Invited Talks & Professional Recognition

- Item Writer/Expert for Mathematics Subject in **National Testing Agency, New Delhi** (Nov 2023).
- **Nominated Member** in Experts panel on National Level - Development of Science & Maths Competency by **Director (Acad) CBSE Board, Delhi**
- **Subject Coordinator** -Vidyaarthi Vigyan Manthan (Vigyan Prasar), MHRD
- **Chaired Sessions** in International Conferences in India & abroad.
- **Invited Talk** in International Conference at RSET, Kerala in 2012.
- **Best Paper Award Nomination** in an international conference.
- **Regular Resource Person** for In service training Program organized by **SCERT**, Solan HP and in **INSPIRE program (DST)** organized by **Shoolini University**, Solan, HP almost every year since 2012.
- **Certificate of Recognition** for excellence in the field of education & service to the community by **Rotary International Club, Shimla**.
- **Scopus Author Id:36166523300 ORCID ID: 0000-0002-9312-0866**
- **Life Member** of *Forum for Interdisciplinary Mathematics (FIM)*, *Indian Society of Technical Education (ISTE)*, *Indian Mathematical Society (IMS)* *Indian Science Congress Association (ISCA)*,

Conference/Workshops (Organized/Attended)

- **Organized** 1 International Conference & 2 national level workshops.
- **Papers presented in 12** International Conference in India & abroad.
- **Attended** 31 workshops/FDP/Short term courses in India & abroad.

Administrative Experience

- Serving as Head of Deptt (June 2022) & Convener of NEP 2020, NAAC Cell
- Served as **Chief Warden** since Jan 2018 – Feb 2022. Performed **Wardenship** in JUITW Hostels for 8 years (2010 – 2014) & (2016 – 2018).
- Member of **University Examination Committee** for 13 Yrs in JUITW.
- Chairman of the **Hostel Advisory Committee** of JUIT, Waknaghat.
- Serving as member of **Student Counseling Centre**, as convener of **IQAC Cell, University Time Table Committee, Internal Security Committee, Community Center, Equal Opportunity Committee etc.**
- Faculty in-charge of **JUIT Youth Club** in 2015-2016.
- Editorial board of University Magazine and organizing spiritual professional talks and sessions for students and faculty.

Prof. Rakesh Kumar Bajaj, Ph.D.

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🌐 Google Scholar

🌐 ORCID

🌐 LinkedIn

Employment History

- More than 20 Years of Teaching Experience in the Department of Mathematics at Jaypee University of Information Technology (JUIT), Wagnaghat, INDIA.
- Joined JUIT, Wagnaghat on 1st May 2003 and currently working as a Professor, Department of Mathematics, JUIT, Wagnaghat, since 15th April 2022.
- 2022 – till date ➤ **Professor & HoD**, Department of Mathematics, JUIT, Wagnaghat, INDIA.
- 2014 – 2022 ➤ **Associate Professor**, Department of Mathematics, JUIT, Wagnaghat, INDIA.
- 2010 – 2014 ➤ **Asstt. Prof. (Sr. Gr)**, Department of Mathematics, JUIT, Wagnaghat, INDIA.
- 2007 – 2010 ➤ **Asstt. Prof. (Gr -II)**, Department of Mathematics, JUIT, Wagnaghat, INDIA.
- 2005 – 2007 ➤ **Asstt. Prof. (Gr -I)**, Department of Mathematics, JUIT, Wagnaghat, INDIA.
- 2003 – 2004 ➤ **Associate Lecturer**, Department of Mathematics, JUIT, Wagnaghat, INDIA.

Education

- 2005 – 2009 ➤ **Ph.D., Jaypee University of Information Technology**, Wagnaghat (H.P.), INDIA.
Thesis title: *Fuzzy Regression, Clustering and Generalized Measures of Fuzzy Information*.
- 2000 – 2002 ➤ **M.Sc. Mathematics, Indian Institute of Technology (IIT)**, Kanpur, INDIA.
CGPA = 8.5
- 1997 – 2000 ➤ **B.Sc. Mathematics (Hons.), Banaras Hindu University**, Varanasi (U.P.), INDIA.
88.9% (R.B Munsri Shiva Prasad Medal for standing first in Mathematics in B.Sc (Hons.)

Personal Information

Date of Birth: 22/02/1980

Family: Mother, Wife & Two Daughters

Permanent Address: Flat No. 301, Gharounda Apartment, Dangra Toli Chowk, Ranchi – 834001, Jharkhand.

Research Interest

Fuzzy Information Measures

Generalizations and Extensions of Fuzzy Sets

Decision-Making Techniques

Books Published

1. “*Spherical Fuzzy Information and Graphs with Soft Computing Applications*”, Narosa Publishing House Pvt. Ltd., New Delhi, 2021. Authors: Rakesh K Bajaj* and Abhishek Guleria. ISBN: 978-81-8487-720-5.
2. “*Advances in Energy Aware Computing and Communication Systems*” Editors: H. Singh, Jimson Mathew, **Rakesh K Bajaj**, Mahesh P., McGraw Hill Education, New Delhi (2013) ISBN: 9-35-134332-4.
3. “*Fuzzy Sets and Information: A Generalized Approach*” authored by **Rakesh K Bajaj**, D.S. Hooda and H. Singh, LAP Lambert Academic Publishing AG & Co. (2009), Saarbrucken, Germany, ISBN: 978-3838351483.

Doctoral Research Supervision

<u>Name</u>	<u>Status</u>	<u>Title of the Thesis</u>
Ms. Monika	Enrolled (Sept 2022)	Spherical Fuzzy and NSS Decision Making
Mr. Himanshu Dhumras	Enrolled (Aug 2021)	Picture Fuzzy Info Measures & Decision Making
Ms. Mahima Poonia	Degree Awarded Enrol- July 2017 Awarded Sept 4, 2022	Picture Fuzzy Sets & Decision Making
Mr. Abhishek Guleria	Degree Awarded Enrol- July 2017 Awarded Dec 4, 2020	Some New Approaches to solve DM Problems under Pythagorean Fuzzy Set Env
Mr. Gaurav Kumar	Degree Awarded (Feb 29, 2016)	On Some New Methodologies using IFS and Applications
Mr. Tanuj Kumar	Degree Awarded (May 28, 2015)	Information and Similarity Measures of Intuitionistic Fuzzy and Soft Sets
Mr. Rajeev Kaushik	Degree Awarded (Feb 23, 2015)	Intuitionistic Fuzzy Information Measures in Image Processing and Decision Making
Mr. Neeraj Gandotra	Degree Awarded (March 27, 2014)	Reliability Properties of Residual Life Time, Inactivity Time & Dec Making in IF Environment

Professional Recognition

1. In the Panel of Experts as one of the Item Writers for the Subject- Mathematics by **National Testing Agency, New Delhi** from 20th Nov - 23rd Nov 2023.
2. Nominated Member in the panel of Experts on all India level for Development of Science and Mathematics Competency by **Director (Acad) CBSE Board, New Delhi**.
3. Subject Coordinator - **Vidyarthi Vigyan Manthan(VVM)** organized by Vigyan Prasar in association with **NCERT of MHRD and Vijnana Bharati** to address various issues like development of study material, Question bank, execution plan, timeline for various tasks, structure & format etc.
4. Session Chair in **ICECCS - 2015** organized by the **NIT, Kurukshetra, India**, from 7 - 8 Dec, 2015.
5. Certificate of recognition on **Teacher's Day 2015 for dedication and excellence in the field of education** and service to the community by **Rotary International Club, Shimla**.
6. Session Chair in **ICACC 2012** organized by Rajagiri School of Engineering and Technology (RSET), Cochin, Kerala, India from 9 - 11 August 2012.
7. Session Chair in **ICMSSC 2010** organized by **WASET 2010** held in **Penang, Malaysia** during 24 - 26 February, 2010.
8. Awarded by **R.B. Munshi Shiva Prasad Medal** for Standing First in B.Sc.III in BHU, Varanasi.
9. Qualified **NET - JRF** in the examination conducted CSIR & UGC, in June 2002.
10. Qualified **GATE - 2003** with 96.80 percentile (AIR - 43).

Conferences / Workshops Organized

1. **Co-organizer of Two-week Advanced Workshop** on “*Advanced Topics in PDEs*” under ATM Schools organized by National Centre for Mathematics (NCM) - A joint centre of TIFE and IIT Bombay at JUIT, Wagnaghat, Solan during the period May 15-27, 2023.
2. **Coordinator of One-week Advanced Workshop** on “*Integral Equations - Solvability Analysis and Applications*” under the auspices of NPDE-TCA sponsored by DST, GoI held at JUIT, Wagnaghat, Solan during the period October 19-25, 2015.
3. **Organizing Secretary of a One-week Workshop** on “*Combinatorics and Graph Theory in Science and Engineering (CGSE 2014)*” being held at Jaypee University of Information Technology (JUIT), Wagnaghat, Solan, during November 3-8, 2014.
4. **Organizing Secretary and Program Chair** of Second International Conference on Eco-friendly Computing and Communication Systems (ICECCS 2013) held at JUIT, Wagnaghat, Solan, during October 17-19, 2013.
5. **Organizing and Hospitality Committee Co-Chair** of 2012 2nd International Conference on Parallel, Distributed and Grid Computing (PDGC-2012) held at JUIT, Wagnaghat, Solan, during December 6-8, 2012.

Research Publications (SCI/SCIE Journals)

1. “On Clustering and Pattern Recognition Techniques Utilizing Bi-parametric Picture Fuzzy (R,S)-Norm Discriminant Information Measure”, H. Dhumras, **R.K. Bajaj**, Scientia Iranica, November (2023) (SCIE, SCOPUS, IF- 1.4).
2. “On potential strategic framework for green supply chain management in the energy sector using q-rung picture fuzzy AHP WASPAS decision-making model” , H. Dhumras, **R.K. Bajaj**, Expert Systems with Applications, vol. 237, Part B, 121550, September (2023). (SCIE, SCOPUS, IF- 8.5).
3. “On prioritization of hydrogen fuel cell technology utilizing bi-parametric picture fuzzy information measures in VIKOR and TOPSIS decision-making approaches”, H. Dhumras, **R.K. Bajaj**, International Journal of Hydrogen Energy, vol.48, no. 96, pp. 37981-37998, October (2022). (SCIE, SCOPUS, IF-7.2).
4. “On Renewable Energy Source Selection Methodologies Utilizing Picture Fuzzy Hypersoft Information with Choice and Value Matrices On Renewable Energy Source Selection Methodologies Utilizing Picture Fuzzy Hypersoft Information with Choice and Value Matrices”, H. Dhumras, **R.K. Bajaj**, Scientia Iranica, December (2022) (SCIE, SCOPUS, IF- 1.4).
5. “On Assembly Robotic Design Evaluation Problem Using Enhanced Quality Function Deployment with q-Rung Orthopair Fuzzy Set Theoretic Environment”, H. Dhumras, **R.K. Bajaj**, Journal of Information Science and Engineering, vol. 39, no. 3, pp. 623-636, Jan 2023. (SCIE, SCOPUS, IF-1.1).
6. “On Complex Fuzzy Matrix with Algebraic Operations, Similarity Measure and its Application in Identification of Reference Signal”, M. Poonia, **R.K. Bajaj**, and L.R. Jimson]Journal of Information Science and Engineering , vol. 39, no. 3, pp. 593-607, May 2023. (SCIE, SCOPUS, IF-1.1).
7. “On Various Aggregation Operators for Picture Fuzzy Hypersoft Information in Decision Making”, Journal of Intelligent Fuzzy Systems, H. Dhumras, **R.K. Bajaj**, vol. 44, no. 5, pp. 7419-7447, February (2023) (SCIE, SCOPUS, IF- 2.0).
8. “Modified EDAS Method for MCDM in Robotic Agri-farming with Picture Fuzzy Soft Dombi Arithmetic-Geometric Aggregation Operators”, H. Dhumras, **R.K. Bajaj**, Soft Computing, vol. 27, no. 8, pp. 5077-5098, March (2023) (SCIE, SCOPUS, IF- 4.1).

9. "On Cohesive Fuzzy Sets, Operations and Properties with Applications in Electromagnetic Signals and Solar Activities", X. Xue, M. Poonia, G.M. Abdulsahib, **R.K. Bajaj**, O.I. Khalaf, H. Dhumras, V.Shukla, *Symmetry* (2023), 15, 595. (SCIE, SCOPUS, IF- 2.7).
10. "On Green Supplier Selection Problem Utilizing Modified TOPSIS with R-norm q-rung Picture Fuzzy Information Measure", H. Dhumras, **R.K. Bajaj**, V. Shukla *International Journal of Information Technology*, vol. 15, no. 5, pp. 2819-2825, June (2023). (ESCI, SCOPUS).
11. "Industry 5.0 Enablers in Consumer Electronics Market Assessment Under T-Spherical Fuzzy Integrated Decision-Making Approach", H. Dhumras, P.K. Shukla, **R.K. Bajaj**, W. Boulila, V. Shukla, P.K. Shukla, V.K. Minchula, S.H. Chauhdary, *IEEE Transactions on Consumer Electronics*, vol. in press, no. in press, October (2023). (SCIE, SCOPUS, IF – 4.3).
12. "On Federated Learning-oriented q-rung Picture Fuzzy TOPSIS/VIKOR Decision-Making Approach in Electronic Marketing Strategic Plans", H. Dhumras, P.K. Shukla, R.K. Bajaj, D.K. Jain, V. Shukla, P.K. Shukla, *IEEE Transactions on Consumer Electronics*, vol. in press, no. in press, October (2023). (SCIE, SCOPUS, IF – 4.3).
13. "T-spherical fuzzy soft matrices, Operations and Applications in Decision Making and Selection Processes", Rakesh K Bajaj* & Abhishek Guleria (Accepted) (Article in Press - Scientia Iranica), October 2021 **Indexing: SCIE, Scopus, MathSciNet; IF: 1.435**
14. "On Laplacian Energy of T-spherical Fuzzy Graphs in Site Selection for Hydropower Plants", **Rakesh K Bajaj** & Abhishek Guleria*, *Soft Computing (Springer)*, [ISSN: 1433-7479; DOI:]. **Indexing: SCIE, Scopus, DBLP; IF: 3.643**. (Accepted - Article in Press- Dec 2021).
15. "On Laplacian Energy of Picture Fuzzy Graphs in Decision Making and Site Selection Problem", Mahima Poonia and **Rakesh K Bajaj***, *Journal of Intelligent and Fuzzy Systems*, Vol. 41 (1), pp. 481-498, Aug 2021 [**SCIE, Scopus; IF: 1.851**] DOI: 10.3233/JIFS-202131.
16. "On Some New Statistical Correlation Measures for T-spherical Fuzzy Sets and Applications in Soft Computing", Abhishek Guleria and **Rakesh K Bajaj***, *Journal of Information Science and Engineering*, Vol. 37, No. 2, pp. 323–336, March 2021. [**Indexing: SCIE, Scopus, IF: 0.887**]
17. "On Some Characterization Results of \tilde{R} -Norm Dynamic Survival Information Measures", Tanuj Kumar and **Rakesh K Bajaj***, *Communications in Statistics - Theory and Methods*, Published - 18 Feb 2021. [**Indexing: SCIE, WoS, Scopus, IF:0.612**] DOI: <https://doi.org/10.1080/03610926.2021.1884880>.
18. "T-spherical Fuzzy Soft Sets and its Aggregation Operators with Application in Decision Making", Abhishek Guleria and **Rakesh K Bajaj***, *Scientia Iranica (Transactions on Industrial Engg)*, Vol. 28 (2), pp. 1014–1029, Mar-April 2021. DOI: 10.24200/SCI.2019. 53027.3018. [**Indexing: SCIE, Scopus, MathSciNet; IF: 1.435**]
19. "Eigen Spherical Fuzzy Set and its Application in Decision Making Problem", Abhishek Guleria and **Rakesh K Bajaj***, *Scientia Iranica (Transactions on Industrial Engg)*, Vol. 28 (1), pp. 516–531, Jan-Feb 2021. DOI: 10.24200/SCI.2019.51999.2470. [**Indexing: SCIE, Scopus, MathSciNet; IF: 1.435**]
20. "A Novel Probabilistic Distance Measure for Picture Fuzzy Sets with its Application in Classification Problems", Abhishek Guleria and **Rakesh K Bajaj***, *Hacettepe Journal of Mathematics and Statistics*, Vol. 49 (6), Nov 2020, Pages 1–20. ISSN: 1303-5010 **Indexing: SCIE, WoS, Scopus, IF: 0.929**
21. "A Robust Decision Making Approach for Hydrogen Power Plant Site Selection Utilizing (R,S)-Norm Pythagorean Fuzzy Information Measures Based on VIKOR and TOPSIS Method", Abhishek Guleria and **Rakesh K Bajaj***, *International Journal of Hydrogen Energy (Elsevier)*, Volume 45, Issue 38, 31 July 2020, pp.18802-18816, ISSN: 0360-3199 **Indexing: SCIE, Scopus, IF: 5.816**
22. "On Accuracy Function and Distance Measures of Interval-valued Pythagorean Fuzzy Sets with Application in Decision Making", Tanuj Kumar, **Rakesh K Bajaj*** and Dilshad Ansari, *Scientia Iranica (Transactions on*

- Industrial Engg), 27(4), 2127–2139, 2020. DOI: 10.24200/SCI.2019.51579.2260]. [**Indexing: SCIE, Scopus, MathSciNet; IF: 1.435**]
23. “*T*-spherical Fuzzy Graphs: Operations, Relations, and Applications in Various Selection Processes”, Abhishek Guleria and **Rakesh K Bajaj***, Arabian Journal of Science and Technology, Springer, Vol No. 45, Issue 3, pp. 2177-2190, 2020. DOI: 10.1007/s13369-019-04107-y [Published Online: 19th Sept 2019; **Indexing: SCIE, Scopus, IF: 1.711**]
 24. “Pythagorean Fuzzy (*R, S*)-Norm Discriminant Measure in Various Decision Making Processes”, Abhishek Guleria and **Rakesh K Bajaj***, Journal of Intelligent and Fuzzy Systems, vol. 38, no. 1, pp. 761–777, 2020. [**SCIE, Scopus; IF: 1.637**](Published - Jan 2020). DOI: 10.3233/JIFS-179447
 25. “Credibility Distribution based *R*-Norm Fuzzy Information Measures in Noiseless Coding Theorems”, Tanuj Kumar, **Rakesh K Bajaj***, Prerna Maheshwari, International Journal of General Systems (**Taylor & Francis**), Vol. 48 (3), 302-320, 2019. [ISSN: 1563-5104; DOI: 10.1080/03081079.2018.1552686]. **Indexing: ABDC Journal - A Rating SCIE, Scopus, DBLP, Web of Science, MathSciNet; IF: 2.931.**
 26. “On Pythagorean Fuzzy Soft Matrices, Operations and their Applications in Decision Making and Medical Diagnosis”, Abhishek Guleria and **Rakesh K Bajaj***, Soft Computing (**Springer**), Vol 23 (17), pp. 7889–7900, 2019. [ISSN: 1433-7479; DOI: 10.1007/ s00500-018-3419-z]. **Indexing: SCIE, Scopus, DBLP; IF: 2.784**].
 27. “Fuzzy Entropy in Weighted Fuzzy Linear Regression Model under Linear Restrictions with Simulation Study”, Tanuj Kumar, **Rakesh K Bajaj*** and Nitin Gupta, *International Journal of General Systems (Taylor & Francis)*, Vol. 43(2), pp. 135-148, 2014. [ISSN: 1563-5104; DOI: 10.1080/03081079.2013. 879301; **Indexing: ABDC Journal - A Rating SCI, Scopus, DBLP, Web of Science, MathSciNet; IF: 2.931**]
 28. “On Partial Monotonic Behaviour of Some Entropy Measures”, Nitin Gupta* and **Rakesh K Bajaj**, *Statistics and Probability Letters (Elsevier)*, Vol.83, pp. 1330-1338, 2013. [ISSN: 0167-7152; DOI: 10.1016/j.spl.2013.02.001; **Indexing: SCI, Scopus, IF:0.677**].
 29. “Useful Fuzzy Measures of Information, Integrated Ambiguity and Directed Divergence”, D.S. Hooda and **Rakesh K Bajaj***, *International Journal of General Systems (Taylor & Francis)*, Vol. 39(6), pp. 647-658, 2010. [ISSN: 1563-5104; DOI: 10.1080/03081079.2010. 495467; **Indexing: ABDC Journal - A Rating SCI, Scopus, DBLP, Web of Science, MathSciNet; IF: 2.931**]

Research Publications (ESCI/Web of Science Journals)

30. “Complex Neutrosophic Matrix with Some Algebraic Operations and Matrix Norm Convergence”, Mahima Poonia & **Rakesh K Bajaj***, Neutrosophic Sets and Systems, 47, pp-165-178, 2022. **Indexing: ESCI (Web of Science), Scopus**
31. “On Measures of Similarity for Neutrosophic Sets with Applications in Classification and Evaluation Processes”, Mahima Poonia & **Rakesh K Bajaj***, Neutrosophic Sets and Systems, 39(1), pp-86-100, Jan 2021. **Indexing: ESCI (Web of Science), Scopus**
32. “On Parametric Divergence Measure of Neutrosophic Sets with its Application in Decision-making Models”, Abhishek Guleria, Saurabh Srivastava and **Rakesh Kumar Bajaj***, Neutrosophic Sets and Systems, Vol.29, pp-101-120, Oct 2019. **Indexing: ESCI (WoS), Scopus**
33. “Technique for Reducing Dimensionality of Data in Decision-Making Utilizing Neutrosophic Soft Matrices”, Abhishek Guleria and **Rakesh Kumar Bajaj***, Neutrosophic Sets and Systems, Vol.29, pp-129-141, Oct 2019. **Indexing: ESCI (WoS), Scopus**
34. “Pythagorean Fuzzy (*R, S*)-norm Information Measure based Multi-criteria Decision Making Problem”, Abhishek Guleria and **Rakesh K Bajaj***, Advances in Fuzzy Systems, Vol 2018 Article ID:8023013, pp. 1-11. August 2018. [ISSN: 1687-7101 DOI: 10.1155/2018 /8023013]. **Indexing: ESCI (WoS), Scopus, DBLP, MathSciNet.**

35. "On Complex Intuitionistic Fuzzy Soft Sets with Distance Measures and Entropies" Tanuj Kumar and **Rakesh K Bajaj***, Journal of Mathematics, Vol 2014 (2014), Article ID-972198, 12 pages. [2314-4629; 10.1155/2014/972198]. **Indexing: ESCI (Web of Science), Scopus, MathSciNet; Citations: 27.**
36. "Preservation Properties of the Laplace Transform and Moment Generating Function Ordering of Residual Life and Inactivity Time" Neeraj Gandotra, Nitin Gupta and **Rakesh K Bajaj**, Journal of Statistics and Management System, 17(4), pp. 301-310, Nov 2014. [ISSN: 2169-0014; DOI: 10.1080/09720510.2014.914294]. **Indexing: ESCI (Web of Science), MathSciNet**
37. "Reliability Properties of Residual Life Time and Inactivity Time of Series and Parallel System", Nitin Gupta, Neeraj Gandotra and **Rakesh K Bajaj**, Journal of Applied Mathematics, Statistics and Informatics, Vol. 8(1), pp. 5-16, May 2012. [ISSN: 1339-0015; DOI:10.2478/v10294-012-0001-7; **Indexing: ESCI (Web of Science), MathSciNet**]
38. "Generalized Measures of Fuzzy Directed-Divergence, Total Ambiguity and Information Improvement", **Rakesh K Bajaj** and D.S. Hooda, *Journal of Applied Mathematics, Statistics and Informatics*, Vol. 6(2), pp. 31-44, Dec 2010. [ISSN: 1339-0015; **Indexing: ESCI (Web of Science), MathSciNet; IF: NA**]
39. "On Generalized R -norm Measures of Fuzzy Information", D.S. Hooda and **Rakesh K Bajaj**, *Journal of Applied Mathematics, Statistics and Informatics*, Vol. 4 No. 2, 199 - 212, 2008. [ISSN: 1339-0015; **Indexing: ESCI (Web of Science), MathSciNet**]

Research Publications (Only Scopus Journals)

40. "On some new aggregation operators for T-spherical fuzzy hypersoft sets with application in renewable energy sources", Monika, **R.K. Bajaj**, and A. Sharma. Int. j. inf. tecnol., vo. 15, pp. 2457-2467, 2023. (SCOPUS).
41. "On Novel Hellinger Divergence Measure of Neutrosophic Hypersoft Sets in Symptomatic Detection of COVID-19", H. Dhumras, **R.K. Bajaj**, Neutrosophic Sets Systems, March (2023), vol. 55, 265-284. (SCOPUS).
42. "Utility Distribution Based Measures of Probabilistic Single Valued Neutrosophic Information, Hybrid Ambiguity & Information Improvement," Poonia, M., Bajaj, R. K., Communications in Computer and Information Science, Springer (Vol 1572, pp-78-89) (Springer) **Indexing: Scopus.**
43. "Ranking of Decision-Making units in Pythagorean Fuzzy CCR Model using Data Envelopment Analysis", Namita Saini, Neeraj Gandotra, Rakesh Bajaj*, R.P. Dwivedi, Materials Today: Proceedings (Elsevier Journal), 33, pp. 3884-3888, July 2020.
<https://doi.org/10.1016/j.matpr.2020.06.243> **Indexing: Scopus**
44. "Optimal Inventory Management System for Deteriorating Items with Linear Demand, Shortages and Partial Backlogging in a Triangular Fuzzy Setup", Suarabh Srivastava and Rakesh K Bajaj*, International Journal of Services and Operations Management, 39(1), pp. 98-120, 2021. - **Scopus**).
45. "Dimensionality Reduction Technique in Decision Making Using Pythagorean Fuzzy Soft Matrices", **Rakesh K Bajaj*** and Abhishek Guleria, Recent Patents on Computer Science, Vol 13 (3), 2020. <https://doi.org/10.2174/22132759121874-4796>. **Indexing: Scopus, EI/Compendex.**
46. "On Energy-constrained Quickest Path Problem in Green Communication Using Intuitionistic Trapezoidal Fuzzy Numbers", Ashutosh Sharma*, Rajiv Kumar and **Rakesh K Bajaj**, Recent Patents on Computer Science, Vol 14 (1), 2021. [ISSN: 1874-4796; DOI: 10.2174/2213275911666181025125224]. **Indexing: Scopus, EI/Compendex.**
47. "Multi-criteria Decision Making with Triangular Intuitionistic Fuzzy Number based on Distance Measure & Parametric Entropy Approach", N Saini, **Rakesh Kumar Bajaj***, N Gandotra, RP Dwivedi, Procedia Computer Science, (**Elsevier**), Vol. 125 (2018), pp. 34-41, Dec 2017. [ISSN: 1877-0509]. **Scopus, UGC Listed.**

48. "Algorithm for Shortest Path Problem in a Network with Interval-valued Intuitionistic Trapezoidal Fuzzy Number", Gaurav Kumar, **Rakesh K Bajaj*** and Neeraj Gandotra, *Procedia Computer Science*, (**Elsevier**), Vol. 70, 123-129, Dec 2015. [ISSN: 1877-0509]. **Indexing: Scopus, UGC Listed.**
49. "On Image Forgery Detection Using Two Dimensional Discrete Cosine Transform and Statistical Moments", Rajeev Kaushik, **Rakesh K Bajaj*** and Jimson Mathew, *Procedia Computer Science*, (**Elsevier**), Vol. 70, pp. 130-136, Dec 2015. [ISSN: 1877-0509]. **Indexing: Scopus, UGC Listed, Citations: 14.**
50. "On Intuitionistic Fuzzy Divergence Measure with Application to Edge Detection" Rajeev Kaushik, **Rakesh K Bajaj*** and Tanuj Kumar, *Procedia Computer Science*, (**Elsevier**), Vol. 70, pp. 2-8, Dec 2015. [ISSN: 1877-0509].
Indexing: Scopus, UGC Listed.
51. "R-norm Intuitionistic Fuzzy Information Measures and its Computational Applications," **Rakesh K Bajaj***, Tanuj Kumar and Nitin Gupta, *Communications in Computer and Information Science* (**Springer**), Vol. 305(8), pp. 372-380, 2012. [ISBN: 9783642321122; DOI: 10.1007/978 - 3 - 642 - 32112 - 243; **Indexing: Scopus, DBLP; IF: NA.**
52. "Sorting of Decision Making Units in Data Envelopment Analysis with Intuitionistic Fuzzy Weighted Entropy" , Neeraj Gandotra, **Rakesh K Bajaj** and Nitin Gupta, *Advances in Intelligent and Soft Computing* (**Springer**), Vol. 166, pp. 567-576, 2012. [ISBN: 978-3-642-30157-5; DOI:10.1007/978-3-642-30157-557; **Indexing: Scopus, DBLP.**
53. "Stochastic Comparisons of Heterogeneous Samples with Homogeneous Exponential Samples", Nitin gupta and **Rakesh K Bajaj***, *International Journal of Mathematical and Computational Sciences* (WASET), Vol. 68, pp. 541-543, 2012. [ISSN: 2010-4111, **Indexing: Scopus.**

Research Publications (Conferences - Scopus Indexed)

54. "Solving Multi-objective Linear Fractional Programming Problem Utilizing (-Cut in Triangular Intuitionistic Fuzzy Setup", **R. K. Bajaj**, S. Srivastava, A. Guleria, (2023).In: Sahoo, L., Senapati, T., Yager, R.R. (eds) *Real Life Applications of Multiple Criteria Decision Making Techniques in Fuzzy Domain. Studies in Fuzziness and Soft Computing*, vol 420. Springer, Singapore.
55. "On Green Supplier Selection Problem Utilizing Modified TOPSIS with R-norm Picture Fuzzy Discriminant Measure," A. Singh, H. Dhumras and **R. K. Bajaj**, 2022 5th International Conference on Multimedia, Signal Processing and Communication Technologies (IMPACT), Aligarh, India, 2022, pp. 1-5, (SCOPUS INDEXED)
56. "On T-Spherical Fuzzy Hypersoft Sets and Their Aggregation Operators with Application in Soft Computing," P. Bansal, H. Dhumras, **R. K. Bajaj**, in 2022 5th International Conference on Multimedia, Signal Processing and Communication Technologies (IMPACT), Aligarh, India, 2022, pp. 1-6. (SCOPUS INDEXED)
57. "On Banking Site Selection Decision Making Problem Utilizing Similarity Measures of Picture Fuzzy Soft Sets," S. Aggarwal, H. Dhumras and **R. K. Bajaj**, 2022 5th International Conference on Multimedia, Signal Processing and Communication Technologies (IMPACT), Aligarh, India, 2022, pp. 1-5, (SCOPUS INDEXED)
58. "On Medical Diagnosis Problem Utilizing Parametric Neutrosophic Discriminant Measure," Muskan, H. Dhumras, V. Shukla and **R. K. Bajaj**, 2023 IEEE International Students Conference on Electrical, Electronics and Computer Science (SCEECS), NIT Bhopal, India, 2022, pp. 1-5, (SCOPUS INDEXED)
59. "On Banking Site Selection Problem on Utilizing Novel Picture Fuzzy Discriminant Measure," E. Sharma, H. Dhumras, V. Shukla and **R. K. Bajaj**, 2023 IEEE International Students Conference on Electrical, Electronics and Computer Science (SCEECS), NIT Bhopal, India, 2022, pp. 1-5, (SCOPUS INDEXED)

60. "On Parametric Picture Fuzzy Information Measure in Pattern Recognition Problem," AA Tiwari, H. Dhumras, V. Shukla and **R. K. Bajaj**, 2023 IEEE International Students Conference on Electrical, Electronics and Computer Science (SCEECS), NIT Bhopal, India, 2022, pp. 1-5, (SCOPUS INDEXED)
61. " On Some New Similarity Measures for Picture Fuzzy Hypersoft Sets with Application in Medical Diagnosis," H. Dhumras, and **R. K. Bajaj**, 2nd International Conference on Emergent Converging Technologies and Biomedical Systems (ETBS), JUIT Solan, India, 2022, pp. 119-130.(SCOPUS INDEXED)
62. " On Picture Fuzzy Information-Based Hybrid Cryptographic TOPSIS Approach for Best Suitable Cloud Storage and Security Level," H. Dhumras, **R. K. Bajaj** and V.Shukla, International Conference on Cryptology and Network Security with Machine Learning (ICCNSML), PSIT Kanpur, India, 2022, pp. 125-134.(SCOPUS INDEXED)
63. "Expected value based ranking of intuitionistic fuzzy variables" Tanuj Kumar and **Rakesh K Bajaj**, Recent Advances in Fundamental and Applied Sciences, American Institute of Physics (AIP) Conference Proceedings, 1860, (July 2017) 020030-1-020030-11; DOI: 10.1063/1.4990329. [**Scopus Indexed**]
64. "On Ranking in Triangular Intuitionistic Fuzzy Multi Criteria Decision Making under (α, β) -cut with 'Useful' Parametric Entropy", Neeraj Gandotra, **Rakesh K Bajaj** and Jimson Mathew, pp.69-74, IEEE proceedings of 5th International Conference on Advances in Computing & Communications (ICACC - 2015) 2-4 Sept. 2015, India. ISBN: 978-1-4673-6993-0; [DOI:10.1109/ICACC.2015.33] **Scopus Indexed**
65. "Vendor Selection under Intuitionistic Trapezoidal Fuzzy Multiple Criteria Decision Making Model with Entropy Weights" Neeraj Gandotra, **Rakesh K Bajaj** and Nitin Gupta, IEEE proceedings of 2nd ICACC, 2012, pp. 18-21, DOI:10.1109/ICACC.2012.5. (**Scopus Indexed**)
66. "Reliability Evaluation of Series and Parallel Systems using Trapezoidal Intuitionistic Fuzzy Sets" by Tanuj Kumar, Nitin Gupta and **Rakesh K Bajaj**, IEEE proceedings of Second International conference on Advances in Computing and Communications (ICACC), 2012, pp. 219-222, DOI:10.1109/ICACC.2012.50.(**Scopus Indexed**)
67. "Utility and Fuzziness Aspects of the Information Measures in Experimental Observations and Computations" **Rakesh K Bajaj** and Nitin Gupta, IEEE proceedings of Second International conference on Advances in Computing and Communications (ICACC), 2012, pp. 9-13, DOI:10.1109/ICACC.2012.3 (**Scopus Indexed**)
68. "Reliability Properties of Series and Parallel Systems under Equilibrium Distribution" Nitin Gupta, Neeraj Gandotra and **Rakesh K Bajaj**, IEEE proceedings of Second International conference on Advances in Computing and Communications (ICACC), 2012, pp. 203-206, DOI:10.1109/ICACC.2012.47 (**Scopus Indexed**)
69. "NTV Metric based New Similarity Measure for Intuitionistic Fuzzy Sets with its Computational Application in Medical Diagnosis" **Rakesh K Bajaj**, Tanuj Kumar and Nitin Gupta, IEEE proc. of 2nd International conference on Advances in Computing and Communications (ICACC), 2012, pp. 1-4, (**Scopus Indexed**)
70. "Fuzzy Entropy on Restricted Fuzzy Linear Regression Model with Cross Validation and Applications" Tanuj Kumar, Nitin Gupta and **Rakesh K Bajaj**, IEEE proceedings of Second International conference on Advances in Computing and Communications (ICACC), 2012, pp. 5-8, DOI:10.1109/ICACC.2012.2 (**Scopus Indexed**)
71. "On Some New Generalized Measures of Fuzzy Information", **Rakesh K Bajaj** and D.S. Hooda, *Proceeding of World Academy of Science, Engineering and Technology*, 62, 642 - 648, 2010. [ISSN: 2070-3724] **Indexing: Scopus**

Publications (Other Peer Reviewed Journals-MathSciNet/EBSCO/UGC)

72. “‘NTV’ Metric Based Entropies of Interval Valued Intuitionistic Fuzzy Sets and Applications in Decision Making”, Tanuj Kumar and **Rakesh K Bajaj (Supervisor)**, *Annals of Fuzzy Mathematics and Informatics*, Vol.9(1), 1-21, Jan 2015. [ISSN: 20939310; eISSN: 2287-6235]. **Indexing: MathSciNet, IF: 1.1147.**
73. “On Some Parametric Generalized Measures of Fuzzy Information, Directed Divergence and Information Improvement”, Tanuj Kumar, **Rakesh Kumar Bajaj** and Nitin Gupta, *International Journal of Computer Applications*, Vol. 30(9), pp. 5-10, 2011. [ISSN: 0975-8887; DOI:10.5120/3666-5185, **Indexing: EBSCO, Google Scholar**].
74. “On Some Reliability Properties of Mean Inactivity Time under Weighing”, Neeraj Gandotra, Rakesh K Bajaj and Nitin Gupta, *International Journal of Computer Applications*, Vol. 30(3), pp. 28-32, 2011. [ISSN: 0975-8887; DOI:10.5120/3666-5185, **Indexing: EBSCO, Google Scholar; IF: 0.835**].
75. “Intuitionistic Fuzzy Weighted Linear Regression Model with Fuzzy Entropy under Linear Restrictions”, Gaurav Kumar and **Rakesh K Bajaj**, *International Scholarly Research Notices - Applied Mathematics*, Vol. 2014 (2014), Article ID-358439, 10 pages. [2090-5564; <http://dx.doi.org/10.1155/2014/358439>].
76. “Implementation of Intuitionistic Fuzzy Approach in Maximizing Net Present Value”, Gaurav Kumar, **Rakesh K Bajaj**, *International Journal of Mathematical, Computational, Physical and Quantum Engineering*, Vol. 8(7), pp. 1036-1040, 2014. [ISSN: 1307-6892, DOI: scholar.waset.org/1999.7/9999259; International Science Index 88].
77. “On Solution of Interval Valued Intuitionistic Fuzzy Assignment Problem Using Similarity Measure and Score Function”, Gaurav Kumar and **Rakesh K Bajaj**, *International Journal of Mathematical, Computational, Physical and Quantum Engineering*, Vol. 8(4), pp. 86-91, 2014. [ISSN: 1307-6892, DOI: scholar.waset.org/Publication/9998707; Indexing: International Science Index 88].
78. “Intuitionistic Fuzzy Reliability of k -out-of- n System using Statistical Confidence Interval”, Gaurav Kumar and **Rakesh K Bajaj**, *International Journal of Applied Information Systems*, Vol. 7(7), pp. 1-7, Aug 2014. [ISSN: 2249-0868]
79. “On Exponential Interval Valued Intuitionistic Fuzzy Entropy of Order α and type β and its Applications in Decision Making”, Rajeev Kaushik and **Rakesh K Bajaj**, *International Journal of Computer Applications*, Vol. 95(12), pp. 1-6, 2014. [ISSN: 0975-8887]
80. “On Intuitionistic Fuzzy Entropy as Cost Function in Image Denoising”, Rajeev Kaushik and **Rakesh K Bajaj**, *International Journal of Applied Information Systems*, Vol. 7(5), pp. 1-5, July 2014.[ISSN:2249-0868]
81. “Reliability Analysis of k -out-of- n : G System Using Triangular Intuitionistic Fuzzy Numbers”, Tanuj Kumar and **Rakesh K Bajaj**, *International Journal of Mathematical, Computational Science and Engineering*, Vol: 8 No:2, 64-70, 2014.[ISSN:1307-6892, International Science Index 86].
82. “On Study, Comparison and Implementation of Fuzzy Algorithm on Iris Data Set”, Kaushal Kishore Sharma, **Rakesh K Bajaj** and Ravindara Bhatt, *Journal of Combinatorics, Information & System Sciences*, Vol. 35(3-4), pp. 439-457, 2010. [ISSN: 0250-9628; Indexing: Mathematical Reviews; IF: NA]. (ICI)
83. “Utilizing Fuzzy Clustering for Intrusion Detection on DARPA Data Set”, Ravindara Bhatt, **Rakesh K Bajaj** and T.S. Lamba, *International Journal of Computer, Mathematical Sciences & Applications*, Vol. 4(1-2), pp. 1-13, 2010.[ISSN: 0973-6786]
84. “On Restricted Fuzzy Linear Regression Model”, **Rakesh K Bajaj**, Gaurav Garg and D.S. Hooda, *Inter. Review of Fuzzy Mathematics*, Vol.4 (1-2), pp. 11 - 23, 2009. [ISSN: 0973-4392] **UGC Listed.**
85. “Fuzzy Clustering Algorithm for Testing the Convergence of projected per capita GDP of BRIC and G6 Countries”, **Rakesh K Bajaj**, Amit Srivastava and D.S. Hooda, *Inter. Journal of Mathematics and Applied Statistics*, Vol.1(1), 1-12, 2010.

86. "Study of Output Convergence pattern of BRIC Economies: Application of Fuzzy Mathematics", **Rakesh K Bajaj** and Amit Srivastava, *The ICFAI University (IPU) Journal of Applied Economics*, Vol. VIII, No. 3 & 4, pp. 107 - 115 May & July 2009.[ISSN: 0972-6861]
87. "Monotonicity and Maximum Fuzziness of Fuzzy Entropy and Directed Divergence Measures", **Rakesh K Bajaj** and D.S. Hooda, *Journal of Mathematics and Systems Sciences*, Vol. 4(2), pp. 37 -46, 2008. (ICI)
88. "Some Non-additive Generalized Information Measures and J -divergence", D.S. Hooda and **Rakesh K Bajaj**, *Aligarh Journal of Statistics*, 26, 65 - 79, 2006.[0971-0388]

Research Papers Under Communication

1. "On Similarity Measures of Complex Picture Fuzzy Sets with Applications in the Field of Pattern Recognition", Himanshu Dhumras, Gaurav Garg, Rakesh K Bajaj*, *Soft Computing (Springer)*, (Communicated).
2. "On Identifying Suitable Hydrogen Power Plant Location Under T-spherical Fuzzy Hypersoft Matrix Structures", Monika, Aman Sharma, Rakesh K Bajaj*, *Soft Computing (Springer)*, (Communicated).
3. "Schweizer-Sklar Triangular Norm-Based Aggregation Operators for Picture Fuzzy Hypersoft Sets Ensuring Green Technology Adoption in Human's Social Healthy Environment", Himanshu Dhumras, Gaurav Garg, Rakesh K Bajaj, *Engineering Applications of Artificial Intelligence (Elsevier)*. (Communicated)
4. "On Industry 4.0 Supply Chain Management System in the Production Sector Utilizing Hybrid q-rung Picture Fuzzy AHP-TOPSIS/VIKOR Decision-Making Techniques", Dhumras, Himanshu; Garg, Gaurav; Shukla, Varun; Bajaj, Rakesh; Kumar, Manoj; Nayyar, Anand, *IEEE Transactions on Engineering Management*. (Communicated)

Research Papers Presented in Seminar/ Conferences

1. Fourth International Conference on Eco-friendly Computing and Communication Systems (ICECCS - 2015), presented the paper titled "On image Forgery Detection Using Two Dimensional Discrete Cosine Transform and Statistical Moments" held in National Institute of Technology, Kurukshetra, India, during 7 - 8 December, 2015.
2. Second International Conference on Advances in Computing and Communications (ICACC 2012)/International Conference on Eco-friendly Computing and Communication Systems (ICECCS - 2012), presented the paper titled "Vendor Selection under Intuitionistic Trapezoidal Fuzzy Multiple Criteria Decision Making Model with Entropy Weights" held in Rajagiri School of Engineering and Technology (RSET), Cochin, Kerala, during 9 - 11 August, 2012.
3. International Conference on Image Information Processing (ICIIP - 2011) organized by the Department of Computer Science & Engineering and Information Technology, JUIT, Wagnaghat, Himachal Pradesh, INDIA, during 3 - 5 November, 2011.
4. International Congress of Mathematicians (ICM 2010), a contributed talk titled "On Restricted Fuzzy Linear Regression using Fuzzy Entropy", held in Hyderabad International Convention Centre, Hyderabad, India during 19 - 27 August, 2010.
5. International Congress of Mathematicians (ICM 2010), a contributed talk titled "On Some Reliability Properties of Mean Inactivity Time Order under Weighing ", held in Hyderabad International Convention Centre (HICC), Hyderabad, India during 19 - 27 August, 2010.
6. International Conference on Mathematics, Statistics and Scientific Computing (ICMSSC 2010) contributed talk titled "On Some New Generalized Measures of Fuzzy Information", organized by WASET 2010 held in Penang, Malaysia during 24 - 26 February, 2010.

7. International Conference on Interdisciplinary Mathematical and Statistical Techniques (IMST - FIM XVIII) contributed talk titled "On Study, Comparison and Implementation of Fuzzy Algorithm on Iris Data Set", held in JUIT, Wagnaghat, Solan (HP), India during 2 - 4 August, 2009.
8. Pre-ICM International Convention on Mathematical Sciences 2008, a contributed talk titled "On Generalized R -norm Measures of Fuzzy Information", held in the University of Delhi, New Delhi, India during 18 - 20 December, 2008.
9. 73rd Annual Conference of Indian Mathematical Society, presented the paper "On Generalized Measures of Fuzzy Directed Divergence", University of Pune, Pune, India during 27 - 30 December 2007.
10. 9th International Conference on BRIC, presented a research paper titled "Projected per capita GDP Convergence Analysis of BRIC countries based on Goldman Sachs Report (2003): Using Fuzzy Clustering Algorithm", held in INMANTEC, Ghaziabad, India during 6 - 8 December 2007.
11. International Conference on Interdisciplinary Mathematical and Statistical Techniques (IMST - FIM XIII) SCRA 2006, contributed talk titled "Some non-additive generalized information measures and J -divergence", held in University of Lisbon/ Polytechnic Institute, Tomar, Portugal during 1 - 4 September 2006.
12. Presented a talk on "Applications of Graph Theory" in a Workshop on "Computational Aspects of Mathematics" in Sant Longowal Institute of Engineering and Technology (SLIET), Longowal, Punjab, India in collaboration with AICTE & ISTE, New Delhi during 22 - 26 May, 2006.

Short Term Courses, FDPs & Workshops Attended

1. One Week AICTE recognized FDP on "NEP 2020 Implementation in Higher Education Institutes" organized by the Department of Curriculum Development Center, NITTTR, Chandigarh at JUIT, Wagnaghat during May 9 - 13, 2022.
2. One Week online workshop on "Recent Trends in Domination and Graph Labelling (RTDGL 2021)" organized by the Department of Mathematics, Ramanujan College, University of Delhi in collaboration with the Academy of Discrete Mathematics and Applications (ADMA) during 27th May 2021 to 31st May 2021. (RTDGL Id: 18200407122021105).
3. One Week FDP on "Advanced Excel with Data Visualization" from 2nd February to 8th February 2021 organized by E & ICT Academy, IIT Kanpur (a joint Initiative of MeitY & IIT Kanpur). (System Identification No. 39769-412234-856e7eeb99788f2).
4. Five days online Short Term Course on "Essential Tools in Optimization" held from 25-29 June 2020 organized by Deptt of Mathematics, Dr B R Ambedkar NIT, Jalandhar, Punjab, India.
5. Five days online "SCRS Lecture Series on Soft Computing (NIA-I)" organized by Soft Computing Research Society, New Delhi, from June 12, 2020 to June 16, 2020. [QR Code:ZJXW6U-CE000006].
6. Three days "SCRS Lecture Series on Soft Computing (Fuzzy Systems:Towards Experimental Study)" organized by Soft Computing Research Society, New Delhi, from May 30, 2020 to June 01, 2020. [QR Code:QPJXR0-CE000042].
7. Five days online "SCRS Lecture Series on Soft Computing (FDP on Multi-Objective Optimization)" organized by Soft Computing Research Society, New Delhi, from June 23, 2020 to June 27, 2020. [QR Code:GHCOBS-CE000050].
8. Webinar on Effective Use of e-Resources Through Knimbus Digital Platform powered by Knimbus held on June 2, 2020 in association with JUIT, Wagnaghat.
9. One Week Online Short Term Course on Recent Advances in Cimputational Intelligence for Signal Processing (RACISP-2020) organized by Dept of ECE, JUIT Wagnaghat during August 10-15, 2020. (Ref: JUIT/WKG/ECE/2020-21/010).

10. One Week International Webinar Series on “Advances in Mathematics” organized by Tata Institute of Social Sciences, Tuljapur from 22 - 27 June 2020.
11. Weekly Webinar/Workshop on Atmospheric Processes and Application of Computational Mathematics (W₃APACM-2020) during 5 - 20 June 2020 organized by Deptt. of Applied Mathematics, Gautam Buddha University & Indian Meteorology Society (Noida Chapter). (Cert No. GBU-DAM-2020/0272)
12. Participated in 5-days FDP from 28th April - 2nd May 2020 on R organized by JUIT Wagnaghat with course material provided by Spoken Tutorial Project, IIT Bombay.
13. Participated in National Webinar on Reflection toward Covid-19: Challenges and Strategies for Marketers organized by School of Management, BBD University on 17th June 2020.
14. Virtual Participation in One week FDP on “Transforming Education with Industry 4.0” organized by Department of CSE and IT, JUIT, Wagnaghat from June 15 to 20, 2020. [FDPTEI2020/PPP/0279].
15. Webinar on Mathematical Modelling perspectives of spread and control strategies for COVID-19 held on 24 June 2020 organized by Jiwaji University, Gwalior.
16. Participated in Online One Week International FDP on “Post Pandemic Scenario Building Using AI, ML and Optimization Techniques (PPSB-AIMLOT-2020)” organized by KDK College of Engineering, Nagpur.
17. Participated in Online One Week FDP on “Soft Computing Techniques and their Applications (SCTA 2020)” organized by Deptt of Mathematics,JIIT, Noida from July 13 to July 18, 2020. (Ref No. MA/FDP/SCTA/2020/003).
18. One Week Online Short Term Training Program on “Applications of Mathematical Sciences” organized by Deptt of Basic Sciences and Humanities, KDK College of Engineering, Nagpur in association with ISTE, New Delhi during 13 - 18 July 2020. (Cert Id. QUFDDC-CE000335)
19. Two days Digital International Conference on Inventory Modeling 2020 organized by the Department of Mathematics, Gujrat University, Ahmedabad held on 22 -23 August, 2020.
20. Two Week Online FDP on “ICT Tools for Teaching, Learning Process and Institute” organized by Electronics and ICT Academies (NIT Patna, MNIT Jaipur, IIITDM Jabalpur, IIT Guwahati, IIT Roorkee) held from 10th-21st August 2020. (Ref. EICT/NITP-MNITJ/99/ECE/35/2020).
21. Virtual Participation in One week FDP on “Computational Intelligence Techniques for Machine Learning” organized by Department of CSE and IT, JUIT, Wagnaghat from August 31 to Sept 5, 2020. [FDPTEI2020/PPP/0279].
22. One day National Webinar Legal Awareness Campaign organized by Arunachal University of Studies held on 6th Sept 2020.
23. Three days workshop on “Perception Towards IPR” held on 10th-12th February, 2020 held at JUIT, Wagnaghat.
24. One Day Workshop on “Patent Filing Procedures and Geographical Indications of Himachal Pradesh”, organized by JUIT, Wagnaghat on 30th Nov 2018.
25. One Week AICTE recognized Short Term Course on “Cloud Computing through ICT” organized by NITTTR, Chandigarh and conducted by Department of Computer Science, JUIT Wagnaghat, H.P. during October 23 - 27, 2017.
26. 5th One Week Workshop on “Tools and Techniques for Data Analysis in Management Research” organized by Department of HSS, JUIT, Wagnaghat, Solan, HP, during June 20-25, 2016.
27. Workshop on “Internet of Things (IoT)” organized by the Department of Computer Science, JUIT Wagnaghat, H.P. during April 26 - 27, 2015.

28. One Week Faculty Development Program organized by Jaypee University of Information Technology, Wagnaghat, H.P. during July 14 - 19, 2014.
29. Workshop on “Global Culture, Technology, and Business” as Road 2 Omaha: Multilateral Summer Immersion Experience with Jaypee University System students delegation, hosted by the University of Nebraska at Omaha (UNO), USA during June 17 - 28, 2012.
30. One day workshop on “Scilab Spoken Tutorial” organized by the Automation Lab, Chemical Engineering Department, IIT Bombay on 13th June 2012 and funded by the National Mission on Education through ICT, MHRD, Govt. of India.
31. Workshop on “Data Mining and Parallel Computing” jointly organized by JUIT, Wagnaghat & University of Florida, USA, during August 2-5, 2011 at JUIT, Wagnaghat.
32. IUCEE 2011 Indo-US Faculty Leadership Institute course “Artificial Neural Networks, Pattern Recognition, Computer Vision and Multimedia Information Retrieval” from July 4-8, 2011 at JUIT, Wagnaghat, Himachal Pradesh.
33. One week instructional workshop on “Computational Aspects of Mathematics” in SLIET, Longowal (Punjab), India in collaboration with AICTE & ISTE, New Delhi during May 22-26, 2006.
34. Two-week short-term course on “Mathematical Methods in Engineering and Science” at I.I.T. Kanpur, India from July 3-15, 2006.

Skills

Languages	■	Strong reading, writing and speaking competencies for English .
Coding	■	MATLAB, \LaTeX
Misc.	■	Academic research, teaching, training, consultation, \LaTeX typesetting and publishing.

Other Miscellaneous Activities

Invited Talks/Lectures

- Invited as a resource person in Mathematics Workshop for developing approach papers for the National Curriculum Framework from 27th May 2022 to 28th May 2022 at Indira Gandhi National Open University (IGNOU), New Delhi in collaboration with Vidya Bharati Uchcha Shiksha Sansthan, Noida.
- Invited as a resource person for the In-Service Training Program for School Lecturers in Mathematics organized by the State Council of Educational Research & Training (SCERT), Solan, H.P., on 12th July 2019.
- Invited as a resource person for the In-Service Training Program for School Lecturers in Mathematics organized by State Council of Educational Research & Training (SCERT), Solan, H.P., on 1st August 2017 from 31-05 August 2017.
- Invited as a resource person for the In-Service Training Program for School Lecturers in Mathematics organized by State Council of Educational Research & Training (SCERT), Solan, H.P., from 19-24, Sept 2016.
- Invited as a resource person for In-Service Training Program for School Lecturers/PGTs in Mathematics organized by State Council of Educational Research Institute (SCERT), Solan, H.P. during 14-19 Dec 2015. (On 19th December, 2015).
- Invited as a resource person for the workshop titled “Technical Manuscript Preparation with Latex” organized by the Department of ECE, JUIT, Wagnaghat, Solan, HP on 29 November 2015.

Other Miscellaneous Activities (continued)

- Invited as a resource person for the In-Service Training Program for School Lecturers/PGTs in Mathematics organized by the State Council of Educational Research Institute (SCERT), Solan, Himachal Pradesh during 24-29 November 2014.
- Invited as a resource person in the Science Camps under INSPIRE Internship program funded by the Department of Science and Technology (DST), Government of India, New Delhi, organized at Shoolini University during
 - 13th August, 2015
 - 5th to 9th October, 2014
 - 28th April to 2nd May, 2014
 - 26th to 30th August, 2011
 - 7th to 11th January, 2011
- Invited as a resource person for the In-Service Training Programme for School Lecturers in Mathematics organized by the State Council of Educational Research Institute (SCERT), Solan, Himachal Pradesh during 22-27 April 2013.
- Invited for a talk to TGTs of various Jawahar Navodaya Vidyalaya (JNV) in a Teacher's development programme organized at JNV, Kunihar, Distt - Solan (H.P.) on 1st September 2012.
- Invited for a Plenary Talk in Second International Conference on Advances in Computing and Communications (ICACC-2012)/International Conference on Eco-friendly Computing and Communication Systems (ICECCS 2012), organized by Rajagiri School of Engineering and Technology (RSET), Cochin, Kerala, during 9 - 11 August, 2012.
- Invited as Visiting Professor in Eternal University, Baru Sahib, H.P., India for a series of guest lectures on Discrete Mathematics/Graph Theory.

Contribution to Departmental Activities

- Maintaining the data compilation of Online Classes taken by the all the faculty of Maths Department during lock-down period of COVID-19 in March - May 2020.
- Member of the PhD Students Selection Committee of the Department - Interview Held on 9th June 2019 (Sunday).
- Delivered an orientation lecture for the new M.Sc. Statistics programme for the students of Govt. Degree College, Solan, organized by JUIT, Wagnaghat on 14th March 2019.
- PhD Faculty Coordinator of Department of Mathematics from July 2010 to June 2018.
- Serving as Department Coordinator for Board of Studies (BOS), Academically weak students committee, Mentoring, Website Maintenance in the Department of Mathematics, JUIT Wagnaghat.
- Serving as Department Coordinator for Feedback of Students, Faculty Project Proposal I/C, PhD Examiner Database in the Department of Mathematics, JUIT Wagnaghat.
- Serving as Member Secretary (Department Affairs) in the Department of Mathematics, JUIT Wagnaghat.
- Committee member of Technology Incubation and Entrepreneurship Development Cell (TIEDC) from Department of Mathematics, JUIT, Wagnaghat since 10th October 2017.

Contribution to Students Activities

- Conducting classes of Engineering Mathematics for GATE aspirants in JUIT Wagnaghat, Solan, H.P. since January 2018.

Other Miscellaneous Activities (continued)

- Organizing a series of 10 Aptitude Test series for 6th and 7th Sem B.Tech. students to prepare them for GATE/campus placement w.e.f. January 2019. Conducted 4 tests yet.
- Organized an Orientation programme for the UPSC aspirant students of JUIT, Wagnaghat (Chanakya Academy, New Delhi) with prior approval on 7th March 2019.
- Organized a workshop titled “Discover Yourself” for the fresh batch students of July 2018 Intake inside the hostel premise.
- Faculty Coordinator of the Movie Club under JUIT Youth Club of Jaypee University of Information Technology, Wagnaghat, Solan (H.P.) during the year 2017 - 2018.
- Coordinator of Discipline subcommittee of DIKSHA-2018 Coordination Committee.
- Member of Selection Committee for JYC Students office Bearers for 2017 - 2018.
- Coordinating various meetings of Hostel Advisory Committee since July 2017.
- Faculty Chaperon for 94 students of JUIT, Wagnaghat participating in annual sports meet “Rann-Neeti 2017” at IIT Mandi during 30th Sept - 2nd Oct 2017.
- Coordinator of Selection Committee for JYC Students office Bearers for 2016-2017.
- Faculty Chaperon for 90 students of JUIT, Wagnaghat participating in annual sports meet “Rann-Neeti 2016” at IIT Mandi during 23rd Sept - 25th Sept 2016.
- Faculty Core Committee for organizing the university Annual Cultural Fest of students “Le Fiestus 2016” organized during 29th May 2016 to 1st May 2016.
- Organized Inter-hostel Cricket League (IHCL-2017) among the hostel students during Jan 24 - 29, 2017 as a celebration on the Republic day in the University Campus.
- Organized Inter-hostel General Aptitude Test (IGAT - 2016) among the hostel students on 14th October 2016 to keep the students aware of such tests for their upcoming/ongoing campus placements.
- Conducted the activity of Best Room Award and fun activities in the senior hostel with the necessary approval in October 2016.
- Conducted the Intra-hostel General Aptitude test on 14th October 2016.
- Faculty Coordinator of the Environment Club under JUIT Youth Club, Wagnaghat, Solan (H.P.) during the year 2015 - 2016.
- Organized National Mathematics Talent Search Examination at JUIT, Wagnaghat on 16th Oct 2011 by Center of Excellence in Interdisciplinary Mathematics(CEIM) under Forum for Interdisciplinary Mathematics (FIM) in Himachal Pradesh Region.

Contribution to Institutional Activities

- Convener of National Education Policy 2020 -(JUIT Cell).
- Serving as Chief Warden of Hostels in Jaypee University of Information Technology (JUIT), Wagnaghat, Solan (H.P.), India since January 2018.
- Deputy Chief Warden of Hostels in Jaypee University of Information Technology (JUIT), Wagnaghat, Solan (H.P.), India during July 2017 - Dec 2017.
- Accomplished annual hostel complete allotment process 2 times (2016-17 & 2017-18).
- Re-deputed as Warden of the Boys Hostel in JUIT Wagnaghat on 24th May 2016 and served till July 2017.
- Warden of the Hostel in Jaypee University of Information Technology (JUIT), Wagnaghat, Solan (H.P.), India for around 5 years upto Nov 2014.
- Member of the committee for scrutinizing files held by the various divisions of Registrar’s office to recommend their retentions and classifications.

Other Miscellaneous Activities (continued)

- Worked as Member in University Examination Committee from July 2005 to June 2018 in JUIT, Wagnaghat, India.
- Member of Student Counseling Center (in the capacity of Chief Warden) of Jaypee University of Information Technology, Wagnaghat, Solan (H.P.) since
- Member of the Organizing Committee of JUIT Community Centre since May 2019.
- Member of Equal Opportunity Committee of Jaypee University of Information Technology, Wagnaghat, Solan (H.P.) wef February 23, 2018.
- Member of Grievance Redressal Cell & Complaints (Sexual Harassment) Committee in (JUIT), Wagnaghat, Solan, September 1, 2017.
- Convener of Professional & Social Activities section in Internal Quality Assurance Cell (IQAC) of Jaypee University of Information Technology (JUIT), Wagnaghat, Solan (H.P.), India since 26th May 2017.
- Member of the enquiry committee constituted to investigate the case of Food Poisoning after serving the dinner in Annapurna on 20th April 2017.
- Member of Internal Quality Assurance Cell (IQAC) of JUIT, Wagnaghat, Solan (H.P.), India during Sept 5, 2016 - 25th May 2017.
- Member of the committee constituted on 17th August 2016 for recommending suitable rates for charging emergency supply in the residential quarters of JUIT.
- Chairman of the Internal Security Committee of Jaypee University of Information Technology (JUIT), Wagnaghat, Solan (H.P.), India since October 15, 2015.
- Deputed in two cities - PATNA and RANCHI for publicity of JUIT Wagnaghat in Times of India Education Expo in May - June 2014.
- Worked as Liaison Officer on behalf of Jaypee University Information Technology (JUIT), Wagnaghat during the UGC visit (September 2011) for the inspection.
- Member of Grievance Redressal Cell & Complaints (Sexual Harassment) Committee in (JUIT), Wagnaghat, Solan in 2011.
- Worked as Chair & Co-chair in University Time Table Committee from January 2007 to July 2008 in JUIT, Wagnaghat, India.
- Worked as Member in University Examination Committee from May 2003 to April 2004 in JUIT, Wagnaghat, India.
- Warden of the Hostel in Jaypee University of Information Technology (JUIT), Wagnaghat, Solan (H.P.), India for around 5 years upto Nov 2014.

Extra Curricular Activities

- Member of the flying Squad of the university for the smooth conduct of the Examinations during the semester.
- Talk for the fresh batch students on Hostel Life and interaction with Wardens in the orientation programme on 19th July 2018.
- Coordinator of One Week Lecture Seminar on “*Journey of Self Discovery*” held at JUIT, Wagnaghat, Solan, organized by ISKCON for faculty and staff as evening classes (H.G. Anand Das, Shimla) during October 7-12, 2017.
- Organizing evening spiritual weekly classes for the families of resident faculty/staff in the campus since October 2017.
- Organized Yoga Sessions on International Yoga Day 21st June of 2016 and 2017.

Other Miscellaneous Activities (continued)

- Organizing Committee and Hospitality Committee Co-Chair in 2nd IEEE International Conference on Parallel Distributed and Grid Computing (PDGC 2012) organized by Department of Computer Science & Engineering and Information Communication Technology, Jaypee University of Information Technology, Wagnaghat, Solan (H.P.), India during December 6-8, 2012.
- Worked as a Tutorial Associate in the Advanced Training Schools in Mathematics, supported by National Board of Higher Mathematics (NBHM) for Instructional School for Lecturers on Differential Equations and Computing, June 4-16, 2012 at Department of Mathematics, JUIT, Wagnaghat, Solan, H.P., India.
- Member of National Advisory Committee in National Conference on Mathematical Sciences and Engineering Applications (NCMSEA 2012) organized by Baba Institute of Technology & Sciences (BITS), Palem, Visakhapatnam, A.P., India.
- Member of Local Organizing Committee of National Conference on 'Recent Trends In Materials Science' organized at JUIT, Wagnaghat in collaboration with MRSI, SSD, SSI on 8th – 10th Oct. 2011.
- Member of the Editorial Board of the Quarterly University Newsletter "*Hilly Ramblings*" since July 2010.
- Worked as Member of Local Organizing Committee and co-ordinator of sessions in 2nd International Symposium on Emerging Trends and Technologies in Libraries and Information Services (ETTLIS - 2010) held during 03 - 05 June , 2010 in JUIT, Wagnaghat, Solan (HP), India.
- Member of Local Organizing Committee in International Conference on Interdisciplinary Mathematical and Statistical Techniques (IMST - FIM XVIII) held during 02 - 04 August, 2009 in JUIT, Wagnaghat, Solan (HP), India.
- Awarded First position for active participation in Cultural Cell under Antaragni 2003, the All India Inter Collegiate cultural Festival of IIT Kanpur held between 23rd Jan to 26th Jan 2003.
- Awarded third prize in Abhinay at Antaragni 2001, the All India Inter Collegiate cultural Festival of IIT Kanpur held between 13th Sept. to 16th Sept. 2001.
- Awarded Special Mention for services to Prayas'99, organized in aid of Lala Lajpat Rai Pathshala, Sunder Bagia and Mahamana Vidyalaya, Hyderabad Colony, Banaras Hindu University in October 1999.
- Served as National Service Scheme Volunteer for 2 Yrs (1998-2000) in Banaras Hindu University, Varanasi, India.
- Served as blood donor in Various blood donation camps in the University organized by IGMC, Shimla and BHU, Varanasi.
- Attended National Service Scheme camps held under "Youth for Rural Reconstruction" Programme in Banaras Hindu University (B.H.U.), Varanasi, India.

Professional Memberships

- Member of SIAM** (Society for Industrial and Applied Mathematics)
- Life Member** (of Forum for Interdisciplinary Mathematics (**FIM**))
- Life Member** (of Indian Society of Technical Education (**ISTE**))
- Life Member** (of Indian Science Congress Association (**ISCA**))
- Life Member** (of Indian Mathematical Society (**IMS**))

External Reviewer of International Journals

- External Reviewer of the Journal "Scientia Iranica" (Indexed in SCI, Scopus)
- External Reviewer of the Journal "Computational and Applied Mathematics" (Indexed in SCI, Scopus)
- External Reviewer of the Journal "Journal of Intelligent and Fuzzy Systems" (Indexed in SCI, Scopus)

Other Miscellaneous Activities (continued)

- External Reviewer of the Journal “Journal of Experimental & Theoretical Artificial Intelligence” (Indexed in SCI, Scopus)
- External Reviewer for many research papers of 5th International Conference on Fuzzy Systems and Data Mining (FSDM 2019), October 18-21, 2019, Kitakyushu City, Japan.
- External Reviewer for many research papers of 5th International Conference on Data Science and Engineering (ICDSE 2019), Sept 26-28, 2019, IIT, Patna.
- External Reviewer of the Journal “General letters in Mathematics”

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