

## Biodata

SlNo	Title of the Article	First Author: Yes/No	Corresponding Author: Yes/No		National/International	ISSN or ISBN	Name of the Journal	Volume No.	Year	First Page No.	Last Page No.
1.	Intuitionistic fuzzy fractal based face recognition in the SIFT domain						National Academy Science letters Springer		April 2026		
2.	Multi threshold segmentation of histopathological colorectal cancer images by an enhanced NFO algorithm	No	No				Journal of Big Data Springer				
3.	<b>A Strong Hybrid Equivalence Framework Based on Dominance Relations and Sensitivity Distance</b>	yes				<b>2320</b> - <b>2882</b>	IJCRT	14 (issue 2)	2026	a6 31	a6 45

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4.	A Fuzzy mX* Oscillation Based Approach of Face Detection  for Images with Some Concealed Features	Srijita Barman				10546618	Pattern recognition and image analysis, springer	35	2025	79 6- 80 7	
5.	An enhanced Reduct method using rough set theory for attribute reduction	Aruna bha and Azad				23496002	International journal of innovative research in technology	12(6)	2025	45 74	45 81
6.	<u><a href="#">Unveiling Data Structures with DRSA: Bridging Gaps in Decision Making</a></u>	yes	yes		International	ISSN: 2349-9249	TIJER	12, issue 11	2025	29 6	30 6
7.	<b>From Rough Information Base to Dominance-Oriented Decision Models: A Theoretical and Applied Study</b>	yes	yes		International	<b>ISSN: E-ISSN 2348-1269, P-ISSN 2349-5138</b>	<b>International Journal of Research and Analytical Reviews</b>	12, issue 4	2025	11 2	12 2

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8.	A spiral and enhanced random search strategy based slime mould Algorithm for global optimization and Interplanetary space craft trajectory problem	Suraj et al;				<a href="https://doi.org/10.1016/j.cnsns.2025.109508">https://doi.org/10.1016/j.cnsns.2025.109508</a> Get rights and content	Communication in nonlinear science and numerical simulation 2025				
9.	Rough set theory: Past, Present and future A comprehensive review	Aruna bha and Tandra					International Journal of Emerging Technologies and Innovative Research	Vol 12, no 10,	Oct 2025	268	281
10.	A study on a new approach to decision analysis using dominance rough set approach	Shantanu	No	Inter	E ISSN 2348-1269 P-ISSN 2349-5138	International Journal of Research and Analytical Reviews (IJRAR)	Vol-12 Issue 2	2025		797	808
11.	A Study on Interval-Valued Intuitionistic Fuzzy Oscillator y Region				Print ISBN9 78-981-99-2767-8 Online ISBN9 78-981-99-2768-5  Doi: <a href="https://doi.org/10.1007/97">https://doi.org/10.1007/97</a>	<a href="#">Proceedings of International Conference on Advanced Communications and Machine Intelligence, Studies in Autonomic, Data-driven and Industrial</a>		<a href="#">First Online: 23 July 2023</a>		1	12

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						8-981-99-2768-5_1	Computing. MICA 2022: Springer Singapore				
12.	On Minimal $\Lambda$ dense set	yes	No		International	1309-4653	Turkish Journal of computer and Mathematics education		2023		
13.	In plane and out plane rotation face detection model	Me and Bibek Majumder			International	Isbn 978-981-19-2224-4	LNNs, Springer	428	2023	978	981
14.	Face Recognition Based on Human Sketches Using Fuzzy Minimal Structure Oscillation in the SIFT Domain	No	No	1	International	Print ISBN: 978-981-15-6317-1 Electronic ISBN: 978-981-15-6318-8	Machine Learning, Image Processing, Network Security and Data Sciences Springer Second International Conference, MIND 2020, Silchar, India, July 30 - 31, 2020, Proceedings, Part II		2020		

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15. s	Face recognition using fuzzy minimal structure oscillation in the wavelet domain	yes	No	1	International;	10546618	Pattern recognition and image analysis Springer	29, No 1		221	227
16.	Impact of Bayesian Decision theoretic rough set based attribute reduction on CART	NO	No	1	International	2349-5162	2019	Vol 5, issue 7	2018	336	342
17. s	A Study on CART Based on Maximum Probabilistic-Based Rough Set.	No	No	2	International	<b>Print</b> ISBN978-3-319-71927-6  <b>Online</b> ISBN978-3-319-71928-3	Mike 2017, HYderabad	LNC S, volume 10682	2017	412-	423
18. s	Application of Fuzzy $m_X^*$ Oscillation in the Field of face recognition using Rough Set	No	No	1	International	<b>2278-8727</b>	Journal of Computer Engineering	Vol 19, Issue 4	Jul – Aug 2017	07	13
19. s	Application of IF set oscillation in the field of face recognition					10546618	<a href="#">Pattern Recognition</a> and <a href="#">Image Analysis</a>	27 <a href="#">Issue</a> 3,	July 2017	625	636
20. s	A frame work for face recognition based on fuzzy minimal structure oscillation and Independent component analysis;	yes	No	1	International		Industry Interactive Innovations in science , engineering and technology. LNNS, V-11,	v-11	2018	209	217

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21.	An application of maximum probabilistic rough set on ID3	No	No	1	International	978-981-13-1742-2	Information and communication technology for intelligent system , Springer	, ch 2, v-106	2018	523	532
22.	Implementation of Bayesian decision theoretic rough set model for attribute reduction	No	No	1	International	978-981-10-3953-9	Industry Interactive Innovation in Science and engineering and technology, Springer, LNNs	v-11	2017		
23.	A Survey: Principal component analysis (PCA)	NO	No	1	International		INTERNATIONAL Journal of advance research in science and engineering	v-6 issue 6	2017	312	320
24.	A new algorithm for removal of high density salt and paper noise in mr images	No	No	1	International		International Journal of advance research in science and engineering	V-6, Issue 6	June 2017	344	359
25.	A method of generating A consistent fuzzy rule base with less number of rules using equivalence classes	Yes	Yes	1	International	10668950	The Journal of fuzzy mathematics	24 No 2	2016	499	506
26.	Clustering using similarity measure	Yes	Yes	1	International	2093-9310	Annals of fuzzy mathematics and informatics	11 No 1	2016	97	107
27.	A study on IF soft * lower rough approximation and IF soft * upper rough approximation	Yes	Yes	1	International	2093-9310	Annals of fuzzy mathematics and informatics	11N O 3	2016	475	483
28.	A study on pre mX continuous function	Yes	Yes	1	International	2149-1402	Journal of new theory	12	2016	8	22

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29.	On If soft oscillating relation	Yes	Yes	1	Inter National	10668950	The Journal of fuzzy mathematics	23No 4	2015	757	766
30. s c o p u s	A study on intuitionistic fuzzy clustering	Yes	yes	01	Inter national	10668950	The Journal of fuzzy mathematics	23 No 3	2015	537	547
31.	Application of fuzzy rough oscillation on the field of data mining (special attention to the crime against women at Tripura)	No	No	01	Inter national	1877-0509	Procedia computer science(Elsevier)	45	2015	790	799
32.	A method for approximating solution of ode by using fuzzy transforms	Yes	Yes	1	Inter national	198069685	Journal of nonlinear analysis and optimization theory and applications	5 No 1	2014	81	87
33.	A study on IF regular closed mX set	yes	Yes	1	Inter national	10668950	The Journal of fuzzy mathematics	22, No 4	2014		
34.	A study on attribute reduction by Bayesian decision theoretic rough set models	Yes	Yes	1	Inter national	20939310	Annals of fuzzy mathematics and informatics	8 no 6	2014	913	920
35. s c o p u s	A study on bayesian decision theoretic rough set	yes	Yes	0	Inter national	2334-4598	International journal of rough sets and data analysis	1 No 1	2014		
36.	On IF weakly generalized minimal closed set	yes	yes	1	Inter National	10668950	The Journal of fuzzy mathematics	22No 3	2014	695	702
37.	Attribute reduction using Bayesian decision theoretic rough set models	Yes	Yes	1	Inter National	2334-4598	International journal of rough sets and data analysis	1 No 1	2014	15	31
38.	Text extraction from low contrast non uniform illuminated documents images using mathematical morphology and fuzzy operator	Yes	Yes	1	Inter national	2093-9310	Annals of fuzzy mathematics and informatics	7 No 3	2014	495	518
39.	Upper and lower rarely mX mY continuous multifunction	yes	Yes	1	Inter national	1304-7981	Journal of new results in science	5	2014	48	56
40.	On fuzzy mX* oscillation and its application in	yes	Yes	1	Inter national	<a href="#">2093-9310</a>	Annals of fuzzy mathematics	7 no 2	2014	319	329

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	image processing						and informatics				
41.	Pre mX generalize closed sets and its applications	Yes	yes	1	International	1304-7981	Journal of new results in science	3	2013	735	741
42.	Some properties of IF semi mX open set	yes	yes	1	International	10668950	The Journal of fuzzy mathematics	21No 3	2013	735	741
43.	Contrast removal fuzzy operator in image processing	yes	yes	1	International	2093-9310	Annals of fuzzy mathematics and informatics	6 No 2	2013	401	413
44.	Intuitionistic fuzzy mathematical morphological approach in image processing	yes	yes	1	International	10668950	The Journal of fuzzy mathematics	21no 1	2013	217	228
45.	On IF rough oscillatory region and its application in decision making	yes	yes	1	International	2093-9310(Print version) 2287-6235 (electronic version)	Annala of fuzzy mathematics and informatics,	vol 5, no1,	January 2013,	241	267
46.	Some results on IF generalized minimal $\Lambda$ set	Yes	Yes	nil	International	1927-5307 (UGC Ref No 48795)	Journal of Mathematical computational science, London Global Impact 0456	Vol 2, No 5	2012	1425	
47.	Study on Bipolar Fuzzy control theory	yes	yes	01	International	1312-7594	International Mathematical forum, Bulgaria	Vol-7, No 41	2012	2019	2025
48.	Some more results on IF soft rough approximation space	yes	yes	01	-do-	16879163	International Journal of combinatorics , Hindawi Publishing corp, Egypt	v-2011	2011	1	10
49.	On generalized minimal closed sets	Yes	yes	Nil	International	International Journal contemporary mathematical sciences	13127586	v-6, no4	2011	153	160
50.	On generalized regular closed sets	Yes	yes	Nil	International	International Journal	13127586	v-6, no3	2011	145	152

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						contemporary mathematical sciences					
51.	Study on pre mX open set	yes	yes	1	International	International mathematical forum, Bulgaria	13127594	v-6, no45	2011	2231	2237
52.	A study on rare mX set and rarely mX continuous functions	yes	yes	Nil	International	Haceteppe Journal of mathematics and statistics	13035010	v-39, 3	2010	295	303
53.	Some results on IF generalized minimal closed sets	yes	yes	Nil	International	International Journal of Mathematical analysis	13128876	v-4, no 32	2010	1577	1589
54.	A study on category of mX induced fuzzy minimal structure	yes	yes	Nil	International	Int J of Fuzzy mathematics, Losanges	10668950	v-17, no-4	2009	979	984
55.	On fuzzy R- $\Lambda$ and fuzzy R- V set	yes	yes	nil	International	Revista studii seria, Romania	12242519	18	2008	13	30
56.	On fuzzy semi $\delta$ - $\Lambda$ continuity in fuzzy $\delta$ -V topological spaces	no	yes	1	International	Ukrainian Journal of Mathematics	0041-5995(Print version) 1573-9376(electronic version)	M Mo 6, no 5	2008	712	717

National

1.	On fuzzy $\delta$ generaliz ed closed sets	Yes	Yes	-	0972-7752	South east asian journal math & math sci	7, no 1	2008	5	17
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2.	On fuzzy $\delta$ - $\Lambda$ and fuzzy $\delta$ -V generaliz ed sets	No	Yes	-	0970-0455	Acta ciencia Indica	Xxiv,	2008	1649	
3.	On intuitionistic fuzzy oscillator y region	Yes	Yes	-	0974-858x	Internati onal journal of fuzzy systems and rough systems , serial publicat ion	1, no1	2008	15	19
4.	Some propertie s of $mX$ - $\Lambda$ (resp $mX$ -V) sets and its applicati ons	Yes	Yes	-	0970-0455	Acta ciencia Indica	Xxiv, no2	2008	513	
5.	Basic probabili ty assignme nt in HIV/AIDS	Yes	Yes	-	-do-	Acta ciencia Indica	Xxiv, no2	2008	17	
6.	On fuzzy strongly $\delta$ - $\Lambda$ and fuzzy strongly $\delta$ -V generaliz ed sets	Yes	Yes	-	-do-	Acta ciencia Indica	Xxiv, no3	2007	801	806
7.	Some stronger form of $I(\text{do}, o)$ mapping	No	Yes	-	0972-1320	J Tri Math Soc	9	2007	29	44
8.	On fuzzy $\delta$ - n topologic al spaces	No	Yes	-	0972-1320	J Tri Math Soc	9	2007	5	20

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	and its applications										
9.	On fuzzy supra semi $\delta$ -v continuity in fuzzy supra semi $\delta$ -v topological space	No	Yes			0970-0455	Acta ciencia Indica		2007		
10.	Study of operators generated by fuzzy $\delta$ - $\Lambda$ and fuzzy $\delta$ -V sets	No	Yes			0970-0455	Acta ciencia Indica	xxxiiM . No 1	2006	279	282
11	Some properties of fuzzy $\delta^*$ connectedness	No	Yes			0972-1320	J Tri Math Soc		2005	7	16
12	On fuzzy semi $\delta$ - $\Lambda$ and fuzzy semi $\delta$ -V sets	No	Yes			0972-1320	J Tri Math Soc		2004	6	88
13	Some properties of fuzzy $\delta$ - $\Lambda$ and fuzzy $\delta$ -V sets	No	Yes			0972-1320	J Tri Math Soc		2004	6	34

Sl No.	Name of the paper	Name of the conference, year ,page NO	ISSN/ISBN No	Name of the co author
14.	A new fuzzy operator in enhancing images	Rough sets, Fuzzy sets and soft computing, NAROSA Publishing house		Md Atikul Islam
15.	A study on the	Mathematical sciences	2278-8697	Purnendu Das

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	monotonicity of the bipolar fuzzy transform	International research journal, Vol 1, No 2, 618-627		
16.	On intuitionistic fuzzy regular closed mX set	Proceedings International conference on rough sets, fuzzy sets and soft computing, Nov 5 – 7, 2009, serials, 297-306	818387417	Jayanti Tripathy
17.	Some more results on fuzzy rough oscillatory region and its application in decision making	Ibid 206-216	-do-	Sushmita Roy
18.	Some more results on oscillatory region of a fuzzy set	International conference on modeling and simulation CIT, Coimbatore , 27-29 august 2007, 665-670	81-8424-218-2	A Mukherjee
19.	On rough minimal structure (RmX structure )	J Tri Math Soc, Special volume, 13, 2011, 107-113	0972-1320	Sushmita Roy
20.	Some properties of pre* mX open set	Ibid, 101-106	-do-	Gour Pal
21.	A special relation in fuzzy image processing	Ibid 81-101	-do-	Md Atikul Islam
22.	Control of Traffic using fuzzy traffic light controller	Ibid 71-80	-do-	Shouvik Bhattacharya
23.	Some properties of fuzzy rough oscillatory region and its application in data mining	Proc Nat Sem on Rec Dev in Math and its Appl, Nov 14-15, 2008, 10-18		Susmita Roy
24.	On fuzzy $\delta^*$ separation axiom	Mathematics and application: Recent Trend, 2007, 32-37		A Mukherjee
25.	Boolean algebra formed by the set of fuzzy operators topology,	National seminar on fuzzy mathematics and its application, 2006, 123-130		-do-
26.	Cosmology An	Proceedings of the		Nil

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	inseparable part of vedanta	seminar cum workshop on vedic mathematics , April 2005, 22- 23		
27.	$\delta$ - Induced fuzzy topological spaces	Proc Nat Sem on Recent Trends in Maths and its Appl, April; 2003, 177-182		A Mukherjee

28.	Application of fuzzy oscillation in the field of face recognition			2015 International Symposium on Advanced Computing and Communication (ISACC)

Total :

29.	A study on fuzzy $\Delta$ set and fuzzy $\nabla$ set	yes	yes	0	Natio nal	0973- 2721	Bulletin Kerala Math society	10 No 2	DEc 2013	227	233
30.	Application of fuzzy rough oscillatory region on data collected for HIV/AIDS	yes	yes	1	Natio nal	0973- 2721	Bulletin kerala Mathematical society	No 1	June 2013	19	26
31.	Upper and lower rarely $mX - mY$ continuous multifunction	yes	yes	1	Natio nal		J, Tri Math Society	v-14,	2012	69	73
32.	A method of reducing the number of rules in a fuzzy rule base particularly with three input parameters	yes	yes	1	Natio AL	0973272 1	Bulletin kerala math association	v-9, no2	Dec 2012	313	318
33.	Effects of basic fuzzy operation on fuzzy images in image	yes	yes	1	Natio nal	0973272 1	Bulletin kerala math association	v-9, no2	Dec 2012	303	313
34.	processing some properties of pre * $mX$ continuous function	yes	yes	1	Natio nal	-do-	-do-	v-9 No-1	Page 13 12	129	139

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35.	Study on various properties of combined operators CI and mX Int in Intuitionistic fuzzy topological spaces	yes	yes	1	Natio nal	-do	-do-	v-8, No 1	June 2011	139	145
36.	Study on various fundamental operators in a topological space	yes	yes	nil	Natio nal	0972- 8643	Antarctica J of Mathematics	v-7, 1	2010	103	110
37.	On Intuitionistic fuzzy generalized mX closed set	yes	yes	1	-do-	097213 20	J. Tri Math Society	11	2009	49	54

### Books

Sl No	Title of the Book	Number of Authors	Name of the Publisher, Place	ISBN NO
1	Rough Sets, Fuzzy Sets and Soft Computing	2 (Editor)	Narosa Publication, New Delhi	978-81-8487-403-7
2	Fuzzy set and fuzzy Topology	2	Narosa publication, New Delhi	978-81-8487-372-6
3	Crime against women in North East India	2	Lambert Academy publisher, Germany, 2011	
4	A study on generalized regular open sets	1	-do-	978-3-8465-9075-1
5	Delta Induced fuzzy topology generated by delta open set	1	-do-, 2010	978-3-8433-5213-0

### Project

Sl. No.	Project Title	Funding Agency	Date of Completion (DOC)	Grant / Amount mobilized (Rs. lakh)
1.	Study on intuitionistic fuzzy	UGC	Feb 2013	8,27,800/=

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	soft set relation intuitionistic fuzzy rough set and their application in various real life problems			
2	On generalized regular open sets and its applications	UGC	01/02/2009-01/02/2011	70,000/=
3	Generalized $\delta$ open set and its application	UGC	01/05/2006-30/04/2008	60,000/=

Research Scholars

## Biodata

Sl. No.	Name	Title of the thesis	Awarded/Registered
01	Susmita Roy	On fuzzy rough oscillatory region and its applications on data mining	Awarded in 2012
02	Jayanti Tripathy	On some generalized concepts of IF mX structure and their applications	Awarded in 2014
03	Md Atikul Islam	Study on some new fuzzy relations and ts applications in the field of fuzzy image processing	Awarded in 2015
04	Shouvik Bhattacharya	Fuzzy rough queuing control and their applications in traffic control	Awarded in 2015
05	Purnendu Das	Some properties of newly constructed fuzzy transforms and its applications in numerical analysis	Awarded in may 2016
06	Kalyani Debnath	On Bayesian decision theoretic rough set model and its application	Awarded in 2017
07	Piyali Debnath	IF soft rough oscillatory region and its application	awarded in 2017
08	Gour pal	A study on generalized pre mX open set on topology generated by mX structure	Registered(left)
09	Amarjit Chanda	A study on some new methods of clustering and applications	Awarded in 14 <sup>th</sup> January 2020
10	Utpal Pal	A study on Bayesian decision theoretic rough set using R Package	Awarded in 2020
11	Sumanta Saha	A study on hybridized ICA PCA Rough set model and its application in the field of image processing	Awarded in 2020
12	Srijita Barman Roy	A study on image processing techniques using various generalized forms of ICA and PCA	Awarded in 2020
13	Bibek Majumder	<i>A Study On Face Recognition Using Various Scale, Rotation and Shift Invariant Transformations</i>	Awarded in 2021
13	Tandra Sarkar	A study on Intuitionistic fuzzy set based hybrid approach on image processing	Awarded 2025
14	Suraj	“A STUDY ON THE APPLICATIONS OF OPTIMIZATION ALGORITHMS IN IMAGE PROCESSING PROBLEMS”	Registered
15	Shantanu Das	—A Study On A New Approach To Decision Analysis Using Dominance Rough Set Approach.	Registered approx feb 2024
16	Arunabha Bhattacharya		

**Training courses, Teaching – Learning – Evaluation Technology Programmes,  
Faculty Development Programmes (not less than one week duration)**

Sl. No.	Programme	Duration	Organized by	API Score
01	<i>ISI-TU Winter School on Pattern Recognition and Image Processing</i>	March 25-29, 2014	Department of Mathematics, University of Tripura	.....

**Papers presented in Conferences, Seminars, Workshops, Symposia.**

Sl. No.	Title of Paper presented	Title of Conference/ Seminar etc. with date	Organized by	Level: College or University /Regional/State/ National/International	API score
		panelist	MBB College	National	
	<b>Feminism and Research methodology</b>	<b>Workshop on feminism and research methodology, 27-31 oct 2025</b>	<b>Mizoram University</b>	<b>University</b>	
	<b>Pi day</b>	<b>Invited talk</b>	<b>Womens College</b>		
	<b>Vedic Cosmology</b>	<b>Invited talk</b>	<b>ICFAI University</b>		
1	Vedic cosmology	National Conference on Ancient Maths, 8-9 Feb, 2024	Tripura Mathematical Society, Agartala	National	7.5
2	International Conference on	6 <sup>th</sup> and 7 <sup>th</sup> September 2022, FRSA, Tripura	frsa	international	

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	fuzzy sets and fuzzy logic generalizations and applications				
3	Participated	2023 5th International Conference on Soft Computing and its Engineering Applications  (icSoftComp2023) December 07-09, 2023.	Smt. Chandaben Mohanbhai Patel Institute of Computer Applications, Charotar University of Science and Technology (CHARUSAT), Changa, India	International	