

DR. SHIVAM SHREEVASTAVA

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ACADEMIC PROFILE

Researcher in fuzzy set theory, intuitionistic fuzzy-rough sets, rough sets, feature selection and dimensionality reduction, soft computing, data science and machine learning, with applications to biomedical/high-dimensional data and uncertainty-aware decision systems. Academic work also includes curriculum development, research administration, student mentoring and interdisciplinary scientific computing.

CURRENT POSITION & ACADEMIC EXPERIENCE

Period	Position	Institution
June 2022 – Present	Assistant Professor	Department of Mathematics, Harcourt Butler Technical University (HBTU), Kanpur
Aug 2019 – June 2022	Assistant Professor	Division of Mathematics, School of Basic & Applied Sciences, Galgotias University, Greater Noida

EDUCATIONAL QUALIFICATIONS

Qualification	Institution / University	Year	Details
Ph.D. (Mathematical Sciences)	Indian Institute of Technology (BHU), Varanasi	2018	Thesis: Hybridization of rough set with intuitionistic fuzzy set and its application to attribute reduction; Supervisor: Prof. Tanmoy Som
M.Sc. Mathematics	Indian Institute of Technology Kanpur	2013	CGPA: 6.8
B.Sc. Mathematics	Institute of Science, Banaras Hindu University, Varanasi	2011	CGPA: 8.57
Intermediate (10+2)	U.P. Board; BRP Inter College, Jaunpur	2008	77.20%
High School (10th)	U.P. Board; FDSP, Jaunpur	2006	76.62%

RESEARCH INTERESTS

- Fuzzy set theory, intuitionistic fuzzy sets, rough sets and fuzzy-rough sets
- Feature selection, attribute reduction and dimensionality reduction
- Soft computing, neuro-fuzzy systems, computational intelligence and uncertainty-aware decision-making
- Machine learning and data science for high-dimensional, incomplete and imbalanced data

CURRENT / RECENT UNIVERSITY RESPONSIBILITIES AT HBTU Kanpur (2022–26)

Responsibility	Duration
Assistant Dean, Research & Development	2025–Current
Warden, WCH-IV (Vishwakarma Hostel)	2024–Current
Convenor, Yoga Sub-Council	2023–Current
Nodal Officer, Innovation / Incubation Hub	2023–Current
Coordinator, Universal Human Values-II	2023–Current
Nodal Officer, CM Yuva Udyami Yojna	2025–Current
Assistant Coordinator, BS-MS (Mathematics and Data Science) Admissions	2023–Current
Nodal Officer, Mental Health and Suicide Prevention	2025–Current
Timetable In-charge, SoBAS	2023–Current
Departmental Coordinator: BS-MS, NAAC, NIRF & Timetable	2023–Current
BoS Member	2022–Current

TEACHING, CURRICULUM & ACADEMIC CONTRIBUTIONS

Recent courses taught include Fuzzy Logic & Applications (Ph.D. coursework), Soft Computing (B.Tech.), Real Analysis, Abstract Algebra, Discrete Mathematical Structures, Engineering Mathematics

SPONSORED / SANCTIONED RESEARCH PROJECT

Project Title	Role	Funding Agency	Grant	Sanction / Status
Fuzzy set-assisted dimensionality reduction and its application on the biomedical datasets	Principal Investigator	HBTU Kanpur	₹1.95 lakh	Sanctioned May 2026

RESEARCH SUPERVISION

- Ph.D. Students: 5 pursuing

Research Scholar	Registration	Mode	Supervision	Status
Neelam Kumari	2021	Part-time	Co-Supervisor	Ongoing
Shivani Dubey	2022	Full-time	Supervisor	Ongoing
Rizwan Ahmad	2023	Part-time	Supervisor	Ongoing
Vibha Yadav	2024	Full-time	Supervisor	Ongoing
Prabhat Kumar Pandey	2026	Full-time	Supervisor	Ongoing

- M.Sc. Students Guided: 21 completed

RESEARCH PUBLICATIONS

Journal Articles

1. Shivam Shreevastava, Khurshid, Abhigyan Nath, Pramesh Chandra Srivastava, Hoshiyar Singh Kanyal & Anoop Kumar Tiwari. "Weighted intuitionistic fuzzy similarity relation for feature subset selection and its applications." *Sādhana*, 51, Article 126, 2026. DOI: 10.1007/s12046-026-03131-7.
2. Neelam Kumari, Varsha Gautam & Shivam Shreevastava. "A review on rough, fuzzy rough and intuitionistic fuzzy rough sets based techniques for attribute reduction." *International Journal of System Assurance Engineering and Management*, 2026. DOI: 10.1007/s13198-026-03368-9.
3. Shivam Shreevastava, Priti Maratha, Tanmoy Som & Anoop Kumar Tiwari. "A novel (alpha, beta)-indiscernibility-assisted intuitionistic fuzzy-rough set model and its application to dimensionality reduction." *Optimization*, 74(9), 2091–2111. DOI: 10.1080/02331934.2023.2270683.
4. Anal Paul, Aneesh Kumar Mishra, Shivam Shreevastava & Anoop Kumar Tiwari. "Deep Reinforcement Learning-based reliable spectrum sensing under SSDF attacks in Cognitive Radio networks." *Journal of Network and Computer Applications*, 103454.
5. Shivam Shreevastava, Shivani Singh, Anoop Kumar Tiwari & Tanmoy Som. "Different classes ratio and Laplace summation operator based intuitionistic fuzzy rough attribute selection." *Iranian Journal of Fuzzy Systems*.
6. Shivani Singh, Shivam Shreevastava, Tanmoy Som & Gaurav Somani. "A fuzzy similarity-based rough set approach for attribute selection in set-valued information systems." *Soft Computing*, 24(6), 4675–4691.
7. Shivani Singh, Shivam Shreevastava, Tanmoy Som & Pankhuri Jain. "Intuitionistic Fuzzy Quantifier and Its Application in Feature Selection." *International Journal of Fuzzy Systems*, 21(2), 441–453.
8. Anoop Kumar Tiwari, Shivam Shreevastava, Karthikeyan Subbiah & Tanmoy Som. "An intuitionistic fuzzy-rough set model and its application to feature selection." *Journal of Intelligent & Fuzzy Systems*, 36(5), 4969–4979.
9. Anoop Kumar Tiwari, Shivam Shreevastava, Tanmoy Som & K. K. Shukla. "Tolerance-based intuitionistic fuzzy-rough set approach for attribute reduction." *Expert Systems with Applications*, 101, 205–212.
10. Anoop Kumar Tiwari, Shivam Shreevastava, K. K. Shukla & S. Karthikeyan. "New Approaches to Intuitionistic Fuzzy-Rough Attribute Reduction." *Journal of Intelligent and Fuzzy Systems*, 34(5), 3385–3394.

11. Shivam Shreevastava, Anoop Kumar Tiwari & Tanmoy Som. “Intuitionistic Fuzzy Neighborhood Rough Set Model for Feature Selection.” *International Journal of Fuzzy System Applications*, 7(2), 75–84.

Conference Proceedings

1. Shivani Dubey & Shivam Shreevastava. “Feature Selection in Missing Valued Information System Using Fuzzy Complementary Gain Ratio.” In *Data Science and Applications (ICDSA 2025)*, Lecture Notes in Networks and Systems, Vol. 1725, Springer Nature, pp. 79–93, 2026. DOI: 10.1007/978-3-032-10940-8_7.
2. Shivam Shreevastava et al. “A Survey on Attribute Reduction Techniques and their Applications in Biomedical Data.” *ICMMAAC*, JECRC University, 1–3 August 2025
3. Shivam Shreevastava et al. “Tolerance-based feature selection of an incomplete interval-valued data.” *SocProS-2025*, IIT Roorkee, 24–26 February 2025.
4. Anoop Kumar Tiwari, Shivam Shreevastava, K. Subbiah & Tanmoy Som. “Enhanced Prediction for Piezophilic Protein by Incorporating Reduced Set of Amino Acids Using Fuzzy-Rough Feature Selection Technique Followed by SMOTE.” *International Conference on Mathematics and Computing*, Springer, pp. 185–196, 2018.
5. Shivam Shreevastava, Anoop Tiwari & Tanmoy Som. “Feature Subset Selection of Semi-supervised Data: An Intuitionistic Fuzzy-Rough Set-Based Concept.” *Proceedings of International Ethical Hacking Conference 2018*, Springer, pp. 303–315, 2019.
6. Shivani Singh, Shivam Shreevastava & Tanmoy Som. “Attribute Reduction of Incomplete Information Systems: An Intuitionistic Fuzzy Rough Set Approach.” *Advances in Intelligent Systems and Computing*, Springer, 2019.

Edited Book

1. Tanmoy Som, Oscar Castillo, Anoop Kumar Tiwari & Shivam Shreevastava (Editors). *Fuzzy, Rough and Intuitionistic Fuzzy Set Approaches for Data Handling: Theory and Applications*. Forum for Interdisciplinary Mathematics, Springer Singapore, 2023. DOI: 10.1007/978-981-19-8566-9.

Book Chapters

1. Tanmoy Som, Shivam Shreevastava, Anoop K. Tiwari & Shivani Singh. “Fuzzy Rough Set Theory-Based Feature Selection: A Review.” In *Mathematical Methods in Interdisciplinary Sciences*, Wiley, 2020.
2. Anoop K. Tiwari, Shivam Shreevastava, Neelam Kumari, Arti Malik & Tanmoy Som. “Application of Feature Extraction and Feature Selection Followed by SMOTE to Improve the Prediction of DNA-Binding Proteins.” In *Fuzzy, Rough and Intuitionistic Fuzzy Set Approaches for Data Handling: Theory and Applications*, Springer, 2023, pp. 101–116. (Corresponding author).
3. Rakesh Kumar Pandey, Anoop Kumar Tiwari, Shivam Shreevastava & Tanmoy Som. “Enhancing the Prediction of Anti-cancer Peptides by Suitable Feature Extraction and FRFS with ACO Search Followed by Resampling.” In *Fuzzy, Rough and Intuitionistic Fuzzy Set Approaches for Data Handling: Theory and Applications*, Springer, 2023, pp. 23–39.

CONFERENCE PRESENTATIONS & PARTICIPATION

1. Presented “Hybrid RIME-PSO Optimization for Adaptive Neuro Fuzzy Inference System: An Application to Breast Cancer Classification” at the 5th International Conference on Nonlinear Applied Analysis and Optimization, IIT Jodhpur, 4–6 December 2025.

2. Presented “Gain ratio induced fuzzy similarity-based attribute reduction” at the 2nd International Conference on Recent Advances in Applied Mathematics (RAAM 2024), IIT (BHU), Varanasi, 3–5 July 2024.
3. Presented “Enhanced Prediction for Piezophilic Protein by incorporating reduced set of amino acids using fuzzy-rough feature selection technique followed by SMOTE” at the 4th International Conference on Mathematics and Computing, IIT (BHU), Varanasi, 9–11 January 2018.
4. Presented “A fuzzy rough set and intuitionistic fuzzy rough set approach for feature selection” at the International Conference of the Indian Mathematics Consortium in cooperation with the American Mathematical Society, DST-CIMS, Institute of Science, BHU, Varanasi, 14–17 December 2016.
5. Attended AMNS 2016, Kathmandu, Nepal, May 2016.
6. Attended International Conference on Mathematical Modelling and Computer Simulation, IIT Madras, December 2014.

INVITED TALKS / EXPERT LECTURES / SESSION CHAIR

Date	Role	Title / Activity	Host / Venue
28 Apr 2026	Invited Talk	Fuzzy logic-based attribute reduction techniques	Teacher’s Enrichment Workshop on Soft Computing Techniques in Artificial Intelligence, JAYPEE Noida
13 Apr 2026	Invited Talk	Fuzzy Set Theory and Its Applications	LNT Mahavidyalaya, Muzaffarpur
06 Mar 2026	Invited Talk	Fuzzy logic in soft computing	Acharya P. C. Ray Lecture Series, Department of Mathematics, K. P. College, Murliganj
13 Nov 2025	Expert Talk	Soft Computing Using Fuzzy Logic	One Week FDP on Advances in Scientific Computing, HBTU Kanpur
07 Nov 2025	Session Chair	International Conference on Frontiers of Pure and Applied Mathematics (FPAM 2025)	Department of Mathematics, HBTU Kanpur
04 Dec 2024	Expert Lecture	Linear Transformation and Its Applications	Central University of Haryana
05 Dec 2024	Expert Lecture	Inner Product Spaces	Central University of Haryana
23 Dec 2023	Session Chair	International Conference on Recent Trends in Mathematics, Statistics and Engineering	SVKM’s NMIMS, Indore

SELECTED ACADEMIC EVENTS ORGANIZED / COORDINATED

Date	Event	Type	Role
12 Jun–14 Jul 2025	Applied Mathematics, AI and Research Tools	One-Month Lecture Series / Workshop	Organizing Secretary
07–08 Jul 2025	Mathematical and Statistical Methods in Engineering, Science and Management	Workshop	Organizing Secretary
15–16 Oct 2025	Mathematics and Data Science	Online Workshop	Organizing Secretary
06–07 Nov 2025	Frontiers of Pure and Applied Mathematics (FPAM 2025)	International Conference	Coordinator
10–14 Nov 2025	Advances in Scientific Computing	One-Week FDP	Coordinator
22 Dec 2025	National Mathematics Day	Seminar / Academic event	Convenor
29 Nov 2024	Fundamentals of Machine Learning for Numeric Data	Expert Lecture	Organizer
18–22 Dec 2023	Challenges & Recent Trends in Mathematical Modelling and Scientific Computing	One-Week FDP	Coordinator
13–19 Oct 2022	Research Methodology and Quantitative Techniques	Short-Term Course	Co-Convenor
01 Apr 2026	HackNova 1.0	Hackathon	Faculty Organizing Team

FACULTY DEVELOPMENT, REFRESHER COURSES, WORKSHOPS & TRAINING ETC. ATTENDED

1. One-Month Faculty Induction Programme, Malaviya Mission Teacher Training Centre, NIT Warangal, 1–29 December 2025.
2. FDP on Emerging Trends in Fluid, Thermal and Energy Harvesting, HRDC, HBTU Kanpur, 5–10 January 2026.
3. One Week FDP on Advances in Scientific Computing, Department of Mathematics, HBTU Kanpur, 10–14 November 2025.
4. Online Workshop on Use of AI in Teaching, 25–26 November 2024.
5. FDP on Futuristic Trends in Clean Energy and Manufacturing Technologies, HRDC, HBTU Kanpur, 30 December 2024–4 January 2025.
6. Advanced Pedagogical Learning and University Administration, HRDC, HBTU Kanpur, 27 May–1 June 2024.
7. 8th Refresher Course in Mathematics, DDU Gorakhpur (UGC-sponsored), 8–21 December 2023.
8. One-week FDP on Mathematical Analysis, Applied Probability and Astrophysics (WMAAPA-2023), Calcutta Mathematical Society, Kolkata, 8–15 September 2023.

9. Short-term Professional Development Programme on NEP-2020 and Higher Education: Recognition of prior learning, Academic Bank of Credits and credit transfer, IGNOU, Delhi, 24–29 April 2023.
10. Workshop on New Trends in Fuzzy and Rough Set Theory and its Applications, Manipal University Jaipur, 25–29 September 2020.
11. NPTEL: Introduction to Fuzzy Set Theory, Arithmetic and Logic, Sep–Dec 2020; R for Beginners (SCET Maharashtra, May 2020); R Training (IIT Bombay Spoken Tutorial, Jan 2020); Introduction to Python (DataCamp, 8 May 2020).
12. International Training Workshop on Fuzzy Logic with Applications, IIT (BHU), Varanasi, 20–25 March 2017.
13. National Workshop on Mathematical Modeling & Computer Simulation, IIT (BHU), Varanasi, 20–21 March 2015; Advanced Training Program in Linear Algebra and Analysis, DST-sponsored, BHU, 2010.

PROFESSIONAL MEMBERSHIPS

- Member, Fuzzy Rough Set Association.
- Member, Indian Society for Mathematical Modeling and Computer Simulation.

HONORS, QUALIFICATIONS, FELLOWSHIPS & RECOGNITION

- Qualified UGC-JRF, June 2014.
- Qualified GATE, 2013.
- Qualified IIT-JAM, 2011.
- Qualified BHU UET, 2008.
- Availed MCM Scholarship at IIT Kanpur during 2011–2012.
- Availed NBHM M.Sc. Scholarship during 2012–2013.
- Junior Research Fellowship (MHRD), 2013–2015; Senior Research Fellowship (MHRD), 2015–2018.

EARLIER ACADEMIC / ADMINISTRATIVE RESPONSIBILITIES

- At Galgotias University: NAAC Criterion 7 In-charge; E-content Coordinator (School); Time Table Coordinator (Department); NPTEL Coordinator (Department); Institutional Repository Coordinator (School).

DECLARATION

I hereby declare that the information given above is true and correct to the best of my knowledge.