

CURRICULUM VITAE

Dr. Shambhu Sharan

Assistant Professor

Department of Mathematics & P.G. Centre

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Education Qualifications

Ph.D.	Indian Institute of Technology(ISM), Dhanbad, 2013
M.Phil.	Indian Institute of Technology(ISM), Dhanbad, 2009
M.Sc.	P.K. Roy Memorial College, Dhanbad, 2008 (A Constituent unit of Vinoba Bhave University, Hazaribag)

Research Interest

- Fuzzy Set, Rough Set & Multisets
- Fuzzy Automata Theory
- Topology

Teaching Experiences

- Working as a Assistant Professor, Department of Mathematics, College of Commerce, Arts & Science, Patna from Nov. 9, 2017 to till date.
- Worked as a Assistant Professor, Department of Mathematics, School of Advanced Sciences, VIT University, Vellore from June 1, 2015 to Nov. 6, 2017.
- Worked as a Assistant Professor, Department of Mathematics, School of Applied Sciences, KIIT University, Bhubaneswar from Jan. 31, 2013 to May 23, 2015.

Skills/Awards/Achievements

- Received research award from the Chancellor of VIT University, Vellore in recognition to research through publication in peer reviewed journals 2016.
- Received research award from the Chancellor of VIT University, Vellore in recognition to research through publication in peer reviewed journals 2017.

- On the recommendation of Department of Science and Technology, New Delhi under the scheme (Young Scientist) of International Travel Support presented a research paper in the 13th International Conference on Rough Sets, Fuzzy Sets, Data Mining and Granular Computing at (RSFDGrC 2011) held at National Research University, Higher School of Economics, [Moscow, Russia](#) during June 25-27, 2011.
- Invited as a guest speaker to deliver a talk on 'Fuzzy Automata Theory' at University Tun Onn Hussain Malaysia (UTHM), [Malaysia](#) conducted by Fuzzy Modeling and Analysis Focus Group during May 31 - June 2, 2017.
- Deliver a talk on "Fuzzy closure space vs. fuzzy rough sets" in The International Workshop on Fuzzy Sets, Rough Sets, Uncertainty Analysis and Application (FRUAA-2011) organized by Department of Mathematics, National Institute of Technology, Durgapur, during November 21-25, 2011.
- Junior Research Fellowship, Indian Institute of Technology (ISM), Dhanbad during 2009-2013.

Book/Monograph published

- Rough & Fuzzy Computing Models: An Algebraic and Topological Approach, LAP Lambert Academic Publishing, Germany, 2016.

Journal Publications/Books

- Shambhu Sharan, B.K. Sharma & Kavi K. Jacob, Interval Type-2 Fuzzy Automata and Interval Type-2 Fuzzy Grammar, Journak of Applied Mathematics and Computing (Springer) (2021) ([DOI 10.1007/s12190-021-01577-y](#)) (IF: 1.24).
- Kavi K. Jacob, S.P. Tiwari, Nor Shamsidah AH & Shambhu Sharan, Restricted cascade and wreath products of fuzzy finite switchboard state machines, Iranian Journal of Fuzzy System, 16(1) (2019) 75-88 (IF: 1.27).
- Shambhu Sharan and S.P. Tiwari, On relationship between generalized rough multisets and multiset topologies, International Journal of Machine Learning and Cybernetics (Springer), 8(6) (2017) 2017-2024 ([DOI 10.1007/s13042-016-0581-4](#)), (IF: 1.110).
- Shambhu Sharan, S.P. Tiwari and V.K. Yadav, Interval type-2 fuzzy rough sets and interval type-2 fuzzy closure spaces, Iranian Journal of Fuzzy System, 12 (2015) 113-125 (IF: 1.06).
- Shambhu Sharan, Arun Kr. Srivastava and S.P. Tiwari, Charaterizations of rough finite state automata, International Journal of Machine Learning and Cybernetics (Springer), 8(3), 2017, 721-730, (IF: 1.110).

- S.P. Tiwari, Shambhu Sharan and Anupam K. Singh, On coverings of products of rough transformation semigroups, International Journal of Foundations of Computer Science (World Scientific), 24 (2013) 375-391. (IF: 0.64).
- S. P. Tiwari, Shambhu Sharan and V.K. Yadav, Fuzzy closure spaces vs. fuzzy rough sets, Fuzzy Information and Engineering, (Elsevier), 6 (2014) 93-100.
- S. P. Tiwari, Anupam Kr. Singh and Shambhu Sharan, Bifuzzy core of fuzzy automata, Iranian Journal of Fuzzy System, 12 (2015) 63-73 (IF:1.05).
- S. P. Tiwari and Shambhu Sharan, Products of rough finite-state machines, Journal of Multiple-Valued logic & Soft Computing, 25(4-5) 2015, 339-356 (IF: 1.05).
- B. K. Sharma, S. P. Tiwari and Shambhu Sharan, On algebraic study of multiset fuzzy automata, Fuzzy Information and Engineering, (Elsevier), 8 (2016) 315-327.
- S. P. Tiwari, Shambhu Sharan and B. Dawazz, L-valued automata and associated L-valued topologies, International Journal of Granular Computing, Rough Sets and Intelligent Systems, 3 (2013) 85-94.
- S. P. Tiwari and Shambhu Sharan, On coverings of rough transformation semigroups, Lecture Notes in Artificial Intelligence, Springer-Verlag, Berlin Heidelberg, Vol. 6743, (2011) 79-86.
- S.P. Tiwari, Anupam K. Singh and Shambhu Sharan, Fuzzy automata based on lattice-ordered monoid and associated topology, Journal of Uncertain Systems, 6 (2012) 51-55.
- S. P. Tiwari, Shambhu Sharan, B. Ghosh and A.K. Singh, Roughness in Banach Algebra, Journal of The Orissa Mathematical Society, 32 (2013) 42-46.
- S. P. Tiwari, Anupam K. Singh and Shambhu Sharan, Fuzzy subsystems of fuzzy automata based on lattice-ordered monoid, Annals of Fuzzy Mathematics and Informatics, 2013 (Article in press).

Conference proceedings

- S. P. Tiwari and Shambhu Sharan, Topologies associated with rough automata, in: Proc. 1st Int. Conf. on Recent Advances in Information Technology (RAIT 2011), IEEE, Vol. 2 (2012) 527-531.
- Shambhu Sharan and S.P. Tiwari, Products of Mealy-type rough finitestate machines, in: Proc. National Conf. on Computing and Communication Systems (IEEE), 2012.

- B.K. Sharma, Shambhu Sharan, S.P. Tiwari, On Minimization of Deterministic Automaton with Rough Output. In: Arumugam S., Bagga J., Beineke L., Panda B. (eds) Theoretical Computer Science and Discrete Mathematics. ICTCSDM 2016. Lecture Notes in Computer Science, vol 10398 (2017) Springer, Cham.

Conference presentations (Poster/oral)

- Presented the paper entitled "On coverings of rough transformation semigroups" at 13th International Conference on Rough Sets, Fuzzy Sets, Data Mining and Granular Computing (RSFDGrC'11) held at **Moscow, Russia** during June 25-27, 2011.
- Presented the paper entitled "L-valued automata and associated L-valued topologies" at the International Congress of Mathematicians (ICM) 2010 held at Hyderabad, India during August 19-27, 2010.
- Presented the paper entitled "On minimization of deterministic automata with rough output" at International Conference on Theoretical Computer Science & Discrete Mathematics, Kalasalingam University, Krishnankoil, Tamil Nadu during Dec. 19-21, 2016.
- Presented the paper entitled "Roughness in Banach Algebra" at 41nd Annual Conference of Orissa Mathematical Society & International Conference on Industrial Mathematics and Soft Computing (ICIMSC-2014) organized by Department of Mathematics, School of Applied Sciences, KIIT University, Bhubaneswar during 4th -5th January 2014.
- Presented the paper entitled "Topologies associated with rough automata" at 1st IEEE International Conference on Recent Advances in Information Technology (RAIT 2012) held at Dhanbad, India during March 25-27, 2012.
- Presented the paper entitled "Products of Mealy-type Rough Finite State Machines" at IEEE National Conference on Computing & Communication Systems (NCCCS-2012) held at Durgapur, India during November 21-22, 2012.
- Presented the paper entitled "On topological characterizations of intuitionistic fuzzy automata" in the National Seminar on Recent Advances in Theoretical and Applied Seismology organized by Department of Applied Mathematics, Indian School of Mines, Dhanbad, during March 27-28, 2009.
- Attended International Conference on Logic, Information, Control and Computations held on February 25 - 27, 2011 at Gandhigram Rural Institute-Deemed University, Gandhigram, Tamil Nadu, India.

- Presented the paper entitled "On topological characterizations of generalized rough multisets" in the 80th Annual Conference of The Indian Mathematical Society organized by Department of Applied Mathematics, Indian School of Mines, Dhanbad, during Dec. 27-30, 2014.

School/Seminar/Workshop

- Participated in the Workshop on Mathematical Applications-2016 organized by Department of Mathematics, School of Advanced Sciences, VIT University, Vellore during Oct. 3-4, 2016.
- Organized the VIT Mathematical MEET-2017 held at VIT University, Vellore on 28th January, 2017.
- Member of the organizing committee for the 61th Congress of Indian Society of Theoretical and Applied Mechanics (ISTAM-2016) organized by Department of Mathematics, School of Advanced Sciences, VIT University, Vellore during Dec. 11-14, 2016.
- Member of the organizing committee in the 30th National Science Day Celebrations-Scigather 2016 organized by Department of Mathematics, School of Advanced Sciences, VIT University, Vellore on 29th February, 2016.
- Supervision the participant during Problem Solving Sessions in Undergraduate Training Programme in Linear Algebra and Analysis (UTPLAA- 2012) held on May 28 - June 06, 2012 at Indian School of Mines, Dhanbad, Sponsored by Department of Science and Technology (DST), New Delhi.
- Faculty Development Program, Organized by KIIT University, Bhubaneswar, India, June 24-28, 2014.
- Faculty Leadership Incubation Program, Organized by VIT University, Vellore, India, June 4-24, 2015.
- Faculty Development Program on Digital Tools Organized by VIT University, Vellore, India, July 29, 2015.

Member of Editorial Board

- International Journal of Mathematics and Systems Science

Reviewer of the Journal

- Journal of Applied Mathematics and Computing (Springer).
- International Journal of Machine Learning and Cybernetics (Springer).
- Iranian Journal of Fuzzy Systems.
- International Journal of Granular Computing, Rough sets and Intelligent Systems.
- Fuzzy Information and Engineering, (Elsevier).

Member in Scientific organizations

- International Rough Sets Society (IRSS).
- Indian Science Congress Association.
- International Association of Engineers (IAENG).
- International Association of Computer Science and Information Technology (IACSIT).
- Society of Applied Mathematics, IIT(ISM), Dhanbad.

Country visited:

- **Moscow, Russia :** To present a research paper entitled "On coverings of rough transformation semigroups" at 13th International Conference on Rough Sets, Fuzzy Sets, Data Mining and Granular Computing (RSFDGrC'11) held at **Moscow, Russia** during June 25-27, 2011 on the recommendation of Department of Science and Technology, New Delhi under the scheme (Young Scientist) of International Travel Support.
- **Malaysia:** Invited as a guest speaker to deliver a talk on 'Fuzzy Automata Theory' at University Tun Onn Hussain Malaysia (UTHM), Malaysia conducted by Fuzzy Modeling and Analysis Focus Group during May 31 - June 2, 2017.