Dr. Scindhiya Laxmi
Assistant Professor
Department of Mathematics and Computing
IIT (ISM) Dhanbad, India
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Research Interests: Physics Informed Neural Networks, Support Vector Machines, Deep Learning

Educational Details

1. **Ph.D.** *June 2022*
   Department of Mathematics, IIT Roorkee, India
   Thesis Title: Proximal and Twin Fuzzy Support Vector Machines for Pattern Classification using Mathematical Programming Approach
   Supervisor: Prof. Shiv Kumar Gupta, Grade: A

2. **Master of Sciences (Mathematics and Scientific Computing)** *June 2015*
   Department of Mathematics, MNNIT Allahabad, India
   Project Title: Geometrical Interpretation Riemann-Stieltjes Integration
   Supervisor: Prof. Sahdeo Padhey

3. **Bachelor of Sciences (Mathematics)** *June 2013*
   Department of Sciences, Mahatma Gandhi Kashi Vidyapith, Varanasi

4. **Diploma (Business Professional Programmer)** *June 2012*
   "O" Level (Computer Sciences)
   National Institute of Electronics and Information Technology, New Delhi

Professional Background

1. **Assistant Professor** *August 2023-Present*
   Department of Mathematics and Computing
   IIT (ISM) Dhanbad**,** India

2. **Research Associate** *January 2023-July 2023*
   Department of Electrical and Communication Engineering
   IISc Bangalore, India

3. **Lecturer** *July 2016-December 2016*
   Department of Sciences
   Isabella Thoburn Degree College (University of Lucknow), Lucknow

Peer-Reviewed Journal Publications

1. **Scindhiya Laxmi**, Sumit Kumar, Shiv Kumar Gupta, "Human activity recognition using fuzzy proximal support vector machine for multicategory classification", *Knowledge and Information Systems,* Vol. 65 (11), pp. 4585-4611, 2023 (IF: 2.5).

2. **Scindhiya Laxmi**, Shiv Kumar Gupta "Multi-category intuitionistic fuzzy twin support vector machines with an application to plant leaf recognition", Engineering *Applications of Artificial Intelligence,* vol. 110, 104687, 2022 (IF: 7.5).

3. **Scindhiya Laxmi**, Shiv Kumar Gupta, Sumit Kumar "Intuitionistic fuzzy least square twin support vector machines for pattern classification", *Annals of Operations Research*, Vol. 339 (3), pp. 1329-1378, 2022 (IF: 4.4).

4. **Scindhiya Laxmi**, Shiv Kumar Gupta, Sumit Kumar "Intuitionistic Fuzzy Proximal Support Vector Machines for Multicategory Classification Problems", *Soft Computing*, Vol. 25, pp. 14039–14057, 2021 (IF: 3.1).

5. **Scindhiya Laxmi**, Shiv Kumar Gupta "Intuitionistic Fuzzy Proximal Support Vector Machines for Pattern Classification" *Neural Processing Letters,* Vol. 51, pp. 2701–2735, 2022 (IF: 2.6).

Conferences

1. **Scindhiya Laxmi**, S. K. Gupta, "Intuitionistic fuzzy proximal support vector machine" at the 51st annual convention of operational research society of India and international conference organized by Indian Institute of Technology (IIT) Bombay, India 16th-19th Dec 2018.

Honors and Awards

1. PhD Fellowship, Ministry of Human Research & Development, India.
2. Qualified **CSIR-UGC JRF** (Junior Research Fellowship) in **Mathematical Sciences** in June 2019.
3. Qualified **IIT-GATE** (Graduate Aptitude Test in Engineering) in **Mathematics** in 2018.
4. Qualified **CSIR-UGC NET** (National Eligibility Test for lectureship) in **Mathematical Sciences** in June 2016.
5. Qualified **IIT-JAM** (Joint Admission Test for Master of Science) in **Mathematics** in 2013.

Courses Taught

1. Neural Networks and Deep Learning (PG), IIT (ISM), Winter Semester 24-25.
2. Data Structures (PG), Monsoon Semester 24-25.
3. Methods of Applied Mathematics (PG), IIT (ISM), Winter Semester 23-24, Course feedback (8.8/10)
4. Mathematics-II (UG), IIT (ISM), Winter Semester 23-24, Course feedback (8.2/10), Summer Semester 23-24 (Co-taught).
5. Mathematics-I (Preparatory, UG), IIT (ISM), Monsoon Semester 23-24, Course feedback (9.8/10)
6. Data Structure Lab (PG), IIT (ISM), Winter Semester 24-25.
7. Computational Oriented Numerical Methods Lab (PG), IIT (ISM), Monsoon Sem 23-24, Course feedback (100%).
8. Abstract Algebra and Real analysis (UG), Isabella Thoburn College (Affiliated to University of Lucknow), July 2016-December 2016.

Teaching Assistantship (NPTEL and IIT Roorkee)

1. **Nonlinear Programming**, NPTEL program, with Dr. S. K. Gupta, Department of Mathematics, IIT Roorkee July-September 2017 and July-September 2018.
2. **Multivariable Calculus**, NPTEL program, with Dr. S. K. Gupta, Department of Mathematics, IIT Roorkee, January-March 2018, January-March 2019.
3. **Matrix Analysis with its Applications**, NPTEL program, Dr. S. K. Gupta Department of Mathematics, IIT Roorkee, July-September 2018.
4. **Optimization Techniques** (MAN-010), Jan-April 2018 at IIT Roorkee.
5. **Mathematics-I** (MAN-001), July-Nov 2018 at IIT Roorkee.

Ph.D. and Master Students (Supervisions)

1. PhD Scholar: Mr. Somnath Das, Novel Physics Inspired Neural Architectures and their applications in biomedical imaging, January 2024-Present.
2. Master Students: 13 (Ongoing).

Administrative Positions

1. Worked as core committee member of Yuva Sangam, Phase-V, IIT (ISM) Dhanbad (Initiative by MoE, India).
2. Worked as Coordinator for the delegates of Yuva Sangam, Phase-V for the visit to Uttarakhand state.
3. Worked as member of Departmental Faculty Selection Committee in the department of Mathematics and Computing, IIT (ISM) Dhanbad.

Workshops and Seminars

1. An active participant in the faculty development program on “Machine Learning with Business Applications” organized by IIM Bangalore and data centre and analytics lab, 21-25 May 2018.
2. Workshop on “Machine Learning and its Applications” organized by Department of Computer Science, IIT Roorkee, 18-20 April 2018.
3. Workshop on “Applied Stochastic Models and Optimization (ASMO-17) organized by Department of Mathematics, IIT Roorkee.
4. Summer Programme in Mathematics (SPIM-2014) conducted in the Harish-Chandra Research Institute, Allahabad.
5. Instructional School on “Schur Multiplier and Related Topics” conducted in the “Harishchandra Research Institute, Allahabad”, 2015.
6. National Instructional Workshop on Cryptology (NIWC-2014) organized by Department of Mathematics, MNNIT Allahabad and Cryptology Research Society of India (CRSI).
7. One-week short term course on “Interpersonal Skills and Personality Development” (August 2013) Organized by Department of Humanities and Social Sciences, MNNIT Allahabad.

Referees

1. Prof. Shiv kumar Gupta, Associate Professor, Department of Mathematics, IIT Roorkee, India. **Email:** s.gupta@ma.iitr.ac.in.
2. Prof. Sumit Kumar, Associate Professor, IIM Udaipur, India, **Email:** sumit.kumar@iimu.ac.in
3. Prof. Suresh Chandra, Professor (Retd.), IIT Delhi, India.