

2021 IEEE Workshop on
Spatial Geoinformatics using Machine Learning Approaches (SGiML)

Organised by

GRSS Kolkata Chapter in collaboration with GRSS Bombay Chapter

Spatial geoinformatics involves acquisition, process and analyse geospatial (earth related) data. Research in this direction is gaining popularity due to its wide applicability in diverse directions e.g., monitoring earth surfaces and environmental & climate change, natural resource management, transportation, smart city applications, agriculture. Machine learning, one of the most popular and demanding methodologies of the day, has an ability to design and develop an automated decision making system utilizing existing knowledges along with the capability to self-improve its performance.

The present workshop will act as a premier forum to introduce latest trends, developments, applications and challenges on spatial geoinformatics and how these could be addressed using machine learning based methodologies.

Academicians, researchers, students and industry personnel across the world will be able to share their research findings with global experts through this 3-day long programme.

Tentative Schedule (in Indian Standard Time) (to be held online):

Day 01: September 23

1. **Inauguration:** 10 a.m. – 10.20 a.m. -- *Padma Shri Prof. Sankar K. Pal*, National Science Chair
Prof. Sushmita Mitra, Chair, IEEE Kolkata Section
2. **Tutorial 1:** 10.30 a.m. – 12.00 noon – **Spatial Geo-Informatics** (*Prof. Soumya K. Ghosh*, IIT Kharagpur, India)
3. **Tutorial 2:** 12.15 a.m. – 1.45 p.m. – **Machine Learning** (*Prof. Ashish Ghosh*, Indian Statistical Institute, Kolkata, India)
4. **Keynote Lecture:** 3 p.m. – 4 p.m. – **Fusing Geospatial Information for Urban Development Mapping from Space** (*Prof. Paolo Gamba*, Past President of GRSS, University of Pavia, Italy)
5. **Distinguished Lecture 1: Remote Sensing of Cities: Day and Night** (*Prof. Qihao Weng*, Indiana State University, USA) (Time: *tba*)
6. **Students' Session 1:** 7 p.m. – 8.30 p.m. – **Student Paper Presentation**

Day 02: September 24

7. **Distinguished Lecture 2: SAR Polarimetry: Theory, Machine Learning & Applications** (*Prof. Carlos Lopez Martinez*, Universitat Politècnica de Catalunya (UPC), Spain) (Time: *tba*)
8. **Invited Talk 1: Applications of Remote Sensing** (TBD)
9. **Invited Talk 2:** 5 p.m. – 6 p.m. – **Remote Sensing and Data Acquisition** (*Dr. Emmett J Ientilucci*, Rochester Institute of Technology, USA)
10. **Students' Session 2: Panel Discussion: Topic: Geoscience in Climate & Agriculture** (Time: *tba*)

Day 03: September 25

11. **Distinguished Lecture 3:** 11.30 a.m. – 1 p.m. – **Earth Observation Data Intelligence and Knowledge Discovery** (*Prof. Mihai Datcu*, Remote Sensing Technology Institute (IMF), German Aerospace Center DLR, Germany)
12. **Invited Talk 3: Environment and Climate Change Monitoring using Machine Learning** (TBD)
13. **Invited Talk 4: Multi-Sensor Multi-Resolution Fusion** (*Prof. Alina Zare*, University of Florida, USA) (Time: *tba*)
14. **Award Ceremony:** 3 p.m. – 4 p.m. – **Best Student Paper Award, Appreciation Award**
15. **Valedictory:** 4.15 p.m. – 5 p.m.

Student Paper Presentation:

Students are encouraged to submit a plagiarism free (less than 15%) technical write-up (a maximum of 10 pages with an abstract and conclusion) on one of the following topics. It is to be noted that the candidature will be cancelled with plagiarized write-up.

Topics may include (but are not limited to):

- Spatial Data Science
- Geoinformatics
- Multimodal Remote Sensing
- Geoscience for Agriculture
- Remote Sensing and Smart City Development
- Remote Sensing and Traffic Management
- Remote Sensing in Healthcare
- Machine Learning for Environmental Monitoring/ Urban Growth/ Climate Science/ Natural Resource Management/ Natural Disaster Management (*any one*)

Eligibility: UG/PG/Doctoral students (students who passed their final examination in 2021 may also apply)

Post Meet Article Mentorship--Selected students will be mentored to improve the quality of their research so that it may lead to good quality Journal publications.

Students' Panel Discussion:

Students are encouraged to participate in a panel discussion on "Geoscience in Climate & Agriculture"

Registration Deadline: September 20, 2021

Registration Fee: Nil (*Registration is mandatory and on first come first served basis*)

Register here: <https://forms.gle/3JNihFqtzSyoYw6u6>

Link to join the Workshop will be sent later

Note: 80% attendance is necessary to receive Participation Certificate