BANGALORE CHAPTER

ONE DAY ONLINE WORKSHOP

on

RECENT ALGORITHMS FOR REMOTE SENSING APPLICATIONS IN AGRICULTURE (RARSAA2023)

On 31-03-2023

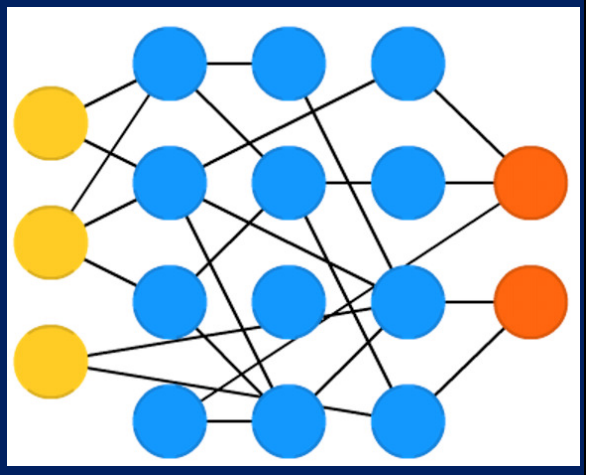
JOINTLY ORGANISED BY

IEEE GRSS BANGALORE CHAPTER, NITK IEEE GRSS STUDENT BRANCH CHAPTER, AND DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING, NIT KARNATAKA SURATHKAL

REGISTRATION LINK

https://forms.gle/FD7kta5Ykf3jixoc8

Last date for registration: 29th March 2023



1. Overview of Online workshop

Remote sensing can be defined as the collection of data about an object from a distance. Humans and many other types of animals accomplish this task with aid of eyes or by the sense of smell or hearing. Geographers use the technique of remote sensing to monitor or measure phenomena found in the Earth's lithosphere, biosphere, hydrosphere, and atmosphere. Remote sensing of the environment by geographers is usually done with the help of mechanical devices known as remote sensors. These gadgets have a greatly improved ability to receive and record information about an object without any physical contact. Often, these sensors are positioned away from the object of interest by using helicopters, planes, and satellites. Most sensing devices record information about an object by measuring an object's transmission of electromagnetic energy from reflecting and radiating surfaces.

Remote sensing imagery has many applications in mapping land-use and cover, agriculture, soils mapping, forestry, city planning, archaeological investigations, military observation, and geomorphological surveying, among other uses. Agriculture provides humanity with food, fuel, and raw materials that are paramount for human livelihood. Today, this role must be satisfied within a context of environmental sustainability and climate change, combined with an unprecedented and still-expanding human population size, while maintaining the viability of agricultural activities to ensure both subsistence and livelihoods. Remote sensing has the capacity to assist the adaptive evolution of agricultural practices in order to face this major challenge, by providing repetitive information on crop status throughout the season at different scales and for different factors. Many recent algorithms offer the many potential applications in the field of remotes sensing data processing and analysis. One such potential for effective and efficient classification of remotely sensed imagery. The strengths of recent algorithms include the capacity to handle data of high dimensionality and to map classes with very complex characteristics. Nevertheless, implementing a recent algorithms for classification are not straightforward, and the literature provides conflicting advice regarding many key issues.

The proposed workshop presents recent algorithms for remote sensing applications in agriculture. It also highlights many real applications of remote sensing and contains sessions for the participants who may not have a strong background in the field. The purpose of the one-day online workshop is to provide an understanding of how to use the recent algorithms like as deep learning algorithms and to equip the participants with available software tools for solving the practical problems in remote sensing domain.

2. Key objectives

The primary objectives of the course are as follows:

- Exposing participants to the fundamentals of remote sensing applications in Agriculture.
- Building in confidence and capability amongst the participants in the application of remote sensing in Agriculture.
- Providing exposure to practical problems and their solutions in the remote sensing applications.
- Enhancing the capability of the participants to identify new applications of remote sensing in Agriculture application.

3. Teaching Faculty for the summer workshop

Instructors from NITK, IIIT, and ISRO

4. Workshop details

4.1 Duration: One Day

4.2 Lectures and practical's schedule

Lecture-1 (9:00am to 10:30am): By Dr. Arun P V, Assistant Professor, IIIT, Sri City Chittoor (A.P)
Topic: Deep Learning Algorithms for Agriculture Remote Sensing Applications

Lecture-2 (10:45am to 12:15pm): By Mr. Mohammed Ahamed J, Scientist/Engineer-SF, NRSC(ISRO), Bangalore.
Topic: Remote Sensing Applications in Agriculture

Lecture-3 (2:00pm to 03:30pm): By Dr. Shwetha H. R., Assistant Professor, NITK, Surathkal.
Topic: Applications of Remote Sensing in Agricultural and Water Resource Management

5. Who can attend

- Students at all levels (Ph.D/M.Tech/MSc/B.Tech(3^{th}Year & 4^{th} Year))
- Faculty members from academic institutions.
- Engineers and researchers from Industry organizations including R&D laboratories.

6. Registration Fee: NIL **Link for registration: https://forms.gle/FD7kta5Ykf3jixoc8**

Important Note: Preferences will be given to IEEE GRSS, and IEEE members.

7.Last date for workshop registration: 29th March 2023

8. Student Volunteers:

1. **Mr. Basavaraju K.S., Chair, NITK IEEE GRSS SBC**
2. **Ms. Vibha K, Member of NITK IEEE GRSS SBC**

9. Workshop Coordinators

1. Dr. Shyam Lal, Vice-chair, IEEE GRSS Bangalore Chapter and
Founding Faculty Advisor of NITK IEEE GRSS Student Branch Chapter,
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