

"A Five-Day Workshop - Student  
Development Program (SDP)"  
on

## **Bridging AI with Earth Systems: Hands-on with Python, Machine Learning & Deep Learning For Earth Systems and Engineering Applications**

**Aug 31<sup>st</sup> - Sept 4<sup>th</sup> 2025**



**Jointly Organised by:**

**Department of Water Resources and  
Ocean Engineering (WROE),  
Department of Electronics and  
Communications Engineering (ECE),  
National Institute of Technology Karnataka  
(NITK) Surathkal**

**In Association with:**

**IEEE GRSS Bangalore chapter and  
NITK IEEE GRSS SBC**



### **About SDP :**

This SDP offers a comprehensive hands-on experience in applying Machine Learning and Deep Learning to Earth and engineering systems. Participants will explore time-series analysis, image processing, forecasting, and uncertainty modeling using real-world spatial and structured data. The program includes expert-led sessions on Python and ML/DL techniques, focusing on both theory and practical implementation. The SDP aims to build critical skills in scientific modeling, data-driven decision-making, and AI-based problem solving through a structured five-day schedule of lectures and labs.

### **Key objectives:**

- Introduce the basics of Python, Machine Learning and Deep Learning
- Provide hands-on training with real-world data from Earth and engineering systems
- Demonstrate application of ML/DL techniques to solve practical problems
- Learn and implement key skills including time-series analysis, image processing, and prediction modeling

### **Patron :**

**Prof. B. Ravi**

Director, National Institute of Technology  
Karnataka, Surathkal.

### **Advisory Committee :**

- **Prof. Subhash C. Yaragal,**  
Deputy Director, NITK.
- **Prof. Dwarakish G S,**  
Dean (Academics), NITK.
- **Prof. T. Laxminidhi,**  
Dean (Faculty & Staff Welfare), NITK.
- **Prof. Govinda Raj Mandela,**  
Dean (Student Welfare), NITK.
- **Prof. Udaya Bhat,**  
Dean (R&C), NITK.
- **Prof. Ramesh H.,**  
HOD, Department of WROE, NITK.
- **Prof. Ramesh Kini M.,**  
HOD, Department of ECE, NITK.

### **Convenors :**

- **Dr. Chandan M. C.,** Assistant Professor,  
Department of WROE, NITK.
- **Dr. Shwetha H.R.,** Assistant Professor,  
Department of WROE, NITK.
- **Dr. Shyam Lal,** Associate Professor,  
Department of ECE, NITK.
- **Dr. Raghavendra B.S.,** Associate Professor,  
Department of ECE, NITK.



## About WROE Department:

The Department of Water Resources & Ocean Engineering (Formerly Applied Mechanics and Hydraulics) was established in 1960 and has earned a good reputation as a centre for academic, research and industrial consulting activities. Academic programmes leading to M. Tech Degree in Marine Structures, Water Resources Engineering and Management, and Geoinformatics and Ph.D. Degrees in the broad areas of Hydraulics and Water Resources Engineering, Coastal Engineering Remote Sensing and GIS Applications are offered. Candidates sponsored under the Quality Improvement Program (QIP) are admitted to these programs in addition to regular students.

## About IEEE GRSS:

The Bangalore Section IEEE Geoscience and Remote Sensing Society (GRSS) Chapter, unites like-minded IEEE members interested in satellite remote sensing and geographical information science (GISci). The chapter conducts seminars/workshops on GRS topics, promotes contributions to IEEE GRSS journals, and organizes short courses for PG students, researchers, faculty, and industry professionals.

## Eligibility:

Research scholars, Ph.D, SRF, JRF and M.Tech/UG students.

Category	Fees (₹)
M.Tech students of NITK (IEEE GRSS members)	500
M.Tech students of NITK (IEEE GRSS non-members)	750
PhD students/SRF of NITK (IEEE GRSS members)	1200
PhD students/SRF of NITK (IEEE GRSS non-members)	1500
M.Tech / PhD students outside NITK (IEEE GRSS members)	2500
M.Tech / PhD students outside NITK (IEEE GRSS non-members)	3000

Link for Registration:



[Click here](#)

Last date for registration:

**25 August 2025**

Notification of selected participants:

**26 August 2025**

***\*Please Note: The registration fee is non-refundable.***

## Confirmed Resource Persons:

- Dr. Ujjwal Verma, MAHE-MIT
- Dr. Deepu Vijayasenan, NITK
- Dr. Shyam Lal, NITK
- Dr. Jeny Rajan, NITK
- Dr. Mahendra Pratap Singh, NITK
- Dr. Prakash P S, ICHEC, Ireland
- Dr. Shilpa Suresh, MAHE-MIT
- Mr. Aman, Galaxeye Space, Bangalore
- Mr. Arya P. Singh, KaleidEO Space Systems

## Student Coordinators:

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## ***\*Please Note:***

- *Registration is limited to 30 participants only, on a first-come, first-served basis.*
- *Tea and snacks will be provided. Lunch is not included.*
- *Participants must carry their own laptops for hands-on sessions.*
- *Accommodation will not be arranged by NITK; participants must make their own arrangements.*