Workshop on Topological Data Analysis

March 21-22, 2024.

Organized By

**Department of Mathematics
Sikkim University**

About the Workshop

Topological Data Analysis (TDA) is an evolving field that studies the application of topological tools to infer relevant features for a given data set. The proposed workshop aims to provide participants, through lectures by experts in the field, the fundamentals of the Topological Data Analysis (TDA) and its applications in data science and related fields. The primary objective of this workshop is to foster knowledge exchange among researchers, students and practitioners in the emerging field of Topological Data Analysis. This workshop will also cover topics in network topology, Ecological networks and its implications for biological conservation.

Speakers

1. **Dr. Priyavrat Deshpande**
   Chennai Mathematical Institute (online)
2. **Prof. Joydev Chattopadhyay**
   Indian Statistical Institute, Kolkata (offline)
3. **Dr. Siddharth Pritam**
   Chennai Mathematical Institute (online)
4. **Dr. Anupam Chaudhuri**
   Deakin University, Australia (online)
5. **Prof. Swarup Roy**
   Sikkim University (offline)

Workshop Outline

- Overview of TDA concepts and its relevance in data analysis.
- Introduction to key topological concepts such as simplicial complexes and persistent homology.
- Understanding how topology can be used to represent and analyse data.
- Construction and reconstruction of network topology.
- Ecological network and its implications for biological conservation.
- Topological network modelling and analysis.

Patron

Prof. Avinash Khare
Vice-Chancellor, Sikkim University

Convener

Prof. Amit Chakraborty
Dr. Alok Kumar Yadav
Dr. Raj Bhavan Yadav

Co-convener

Mrs. Rinkila Bhutia
Dr. Namita Behera

About the Department

The Department of Mathematics at Sikkim University is a part of the School of Physical Sciences, established in the year 2008. It offers postgraduate and PhD programmes in Mathematics. The department is dedicated to providing quality education in mathematics and developing research activities, including interdisciplinary mathematics applications.

Date

March 21-22, 2024

Time

10:30 AM Onwards

Venue

Day 1: Cauvery Hall, Sikkim University
Day 2: Barad Sadan, Sikkim University

Target Audience

Faculty members, researchers and students interested in the fields of data analysis techniques, statistics, mathematics, computational sciences. Prior registration is mandatory and restricted to first 30 participants.

Registration Details

Registration fee is ₹300 for students and ₹1000 for faculty members. The payment has to be made online to the bank details given below and the receipt of the same must be uploaded while filling up the online registration form.

Bank Name: State Bank of India
Branch: Ranipool
A/C No.: 37937291956
IFSC Code: SBIN0012421

Registration Link

https://forms.gle/wxS9Ky5eiu45sJnaA

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