

**ICTS-OT/ML/PDE Seminar (Online)**

**Title** : Learning Operators.

**Speaker** : Siddhartha Mishra (ETH Zurich)

**Date** : Tuesday 28<sup>th</sup> March, 2023

**Time** : 12:30 pm to 01:20 pm (IST)

**Abstract** : Operators are mapping between infinite-dimensional spaces and arise in a variety of contexts, particularly in the solution of PDEs. The main aim of this lecture would be to introduce the audience to the rapidly emerging area of operator learning, i.e., machine learning operators from data. To this end, we will summarize existing architectures such as DeepONets and Fourier neural operators (FNOs) as well as describe the newly proposed Convolutional Neural Operators (CNOs). Theoretical error estimates for different operator learning architectures will be mentioned and numerical experiments comparing them described. Several open issues regarding operator learning will also be covered. If time permits, we will describe Neural Inverse operators (NIOs): a machine-learning architecture for the efficient learning of a class of inverse problems associated with PDEs.

**Venue** : Online: Please click the below link to join the seminar.

<https://us02web.zoom.us/j/81379290349>

Meeting ID: 813 7929 0349