



ICTS -OT/MI/PDE Seminar Series (Online)

Title : Unbalanced Optimal Transport for Machine Learning

Speaker : Laetitia Chapel (Institut Agro Rennes-Angers, France)

Date : Tuesday, 23rd April 2024

Time : 2:00 PM (IST)

Abstract : Optimal transport (OT) has become a powerful tool for calculating distances, also known as Wasserstein or earth mover's distances, between empirical data distributions. This is made possible by efficient computational schemes that render transport computations manageable. The OT problem aims to find a transportation map that preserves the total mass between two probability distributions, requiring their masses to be equal. However, this requirement can be overly restrictive in certain applications, such as color or shape matching, where distributions may have arbitrary masses, and/or when only a fraction of the total mass needs to be transported. Unbalanced Optimal Transport (UOT) addresses the challenge of removing some mass from the problem by relaxing marginal conditions, using weighted penalties in lieu of equality. In this talk, we will review efficient algorithms developed in this context, with a particular focus on formulations where no entropic regularization is imposed on the OT plan. We will also examine classical machine learning applications in which UOT has been successfully applied, with a focus on data living in incomparable spaces.

Venue : Please click on the below link to join the talk
<https://us02web.zoom.us/j/81379290349>
Meeting ID: 813 7929 0349