



## ICTS - OT/ML/PDE Seminar

**Title** : What distance to use between probabilities over probabilities?

**Speaker** : Hugo Lavenant (Bocconi University, Italy)

**Date** : Tuesday, 28 January 2025

**Time** : 4:00 PM (IST)

**Abstract** : We consider probability distributions over the space of probability distributions and we discuss what distance we can put on this space. Several authors have proposed the Wasserstein over Wasserstein distance, but we prove that the infinite-dimensionality of the space of probabilities drastically deteriorates its sample complexity, which is slower than any polynomial rate in the sample size. We thus propose a new distance that preserves many desirable properties of the former while achieving a parametric rate of convergence. Our study was motivated by applications in Bayesian Nonparametrics Statistics, and we also propose a two-sample test for laws of exchangeable sequences based on this new distance.

**Venue** : Online

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

Meeting ID: 813 7929 0349