Séminaire de Probabilités et Statistiques

Mardi 18 octobre **de 11h00 à 12h00**
Laboratoire Dieudonné
Salle de Conférences

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Optimal transport for machine learning : domain adaptation and mapping estimation

The idea of the talk is : Optimal transport (OT) has been a topic of strong interest recently in machine learning thanks to the development of regularized optimal transport that can be solved using fast optimization algorithms. In this presentation I will first present an application of optimal transport to domain adaptation. In this case we want to learn a classifier on an unlabeled dataset using a labeled dataset drawn from a different (but related) distribution. To this end, we propose a novel regularization that will help preserve the class information during transportation. Numerical experiments show that OT can model efficiently the change between the distributions and provide a nice tool for mapping the samples onto the target distribution. Finally I will discuss the problem of learning directly a smooth mapping between empirical distributions that can be used to transport new samples between distributions. We illustrate the method again on domain adaptation and on the problem of seamless copy in images