22 JAN

14h00 à 16h00
Université Paris Cité

THÈSES ET HDR

Pierre HUMBERT : Tensors and graphs for multivariate signal analysis — application to neuroscience

Directeurs de thèse : N. Vayatis, L. Oudre, J. Audiffren
Soutenance : 22/01/2021

AJOUTER AU CALENDRIER

Résumé :

How to extract knowledge from multivariate data has emerged as a fundamental question in recent years. Indeed, their increasing availability has highlighted the limitations of standard models and the need to move towards more versatile methods.

The main objective of this thesis is to provide methods and algorithms taking into account the structure of multivariate signals. Well-known examples of such signals are images, stereo audios, multichannel ElectroEncephaloGrams (EEGs), and signals recorded by sensor networks. Among the existing approaches, we specifically focus on those based on graph or tensor-induced structure which have already attracted increasing attention because of their ability to better exploit the multivariate aspect of data and their underlying structure.

Although this thesis takes the study of patients under general anesthesia as a privileged applicative context, methods developed are also adapted to a wide range of multivariate structured data.