

Journées Statistiques du Sud 2024

mercredi 19 juin 2024 - vendredi 21 juin 2024

IRIT, Université Paul Sabatier

Programme scientifique

Le but de ces journées est de donner une vue d'ensemble des développements scientifiques récents en statistique et de promouvoir les échanges entre étudiants diplômés, chercheurs confirmés.

Mini-cours

Claire Boyer - LPSM, Sorbonne Université - *Jeudi 20/06 à 16h30 et Vendredi 21/06 à 11h*
A primer on diffusion-based generative models

Emmanuel Rachelson - ISAE-Supaéro - *Mercredi 19/06 à 11h et Jeudi 20/06 à 11h*
Introduction à l'apprentissage par renforcement

Exposés longs

Nicolas Chopin - ENSAE, Institut Polytechnique de Paris - *TBA*
Unbiased estimation of smooth functions, Applications in statistic and machine learning

Maud Delattre - INRAE, Unité MaIAGE - *TBA*
A new preconditioned stochastic gradient algorithm for estimation in latent variable models.

Edith Gabriel - INRAE, Unité BioSP - *TBA*
Integrated Spatial Surveillance for Risk Assessment Using Point Processes and Machine Learning: Application to Plant Health

Sébastien Gerchinovitz - IRT St Exupéry - *TBA*
Guaranteed prediction sets via concentration inequalities

Anaïs Rouanet - ISPED, Université de Bordeaux - *TBA*
Nonparametric Bayesian mixture models for identifying clusters from longitudinal and cross-sectional data

Frédéric Richard - I2M, Université Aix-Marseille - *TBA*
Inference techniques for the analysis of Brownian image textures

Mathieu Serrurier - IRIT, Université Paul-Sabatier - *TBA*
Building explainable and robust neural networks by using Lipschitz constraints and Optimal Transport

The lack of robustness and explainability in neural networks is directly linked to the arbitrarily high Lipschitz constant of deep models. Although constraining the Lipschitz constant has been shown to improve these properties, it can make it challenging to learn with classical loss functions. In this presentation, we explain how to control this constant, and demonstrate that training such networks requires defining specific loss functions and optimization processes. To this end, we propose a loss function based on optimal transport that not only certifies robustness but also converts adversarial examples into provable counterfactual examples.

TBA

Exposés courts

Marie Chion - MRC Biostatistics Unit, University of Cambridge - *TBA*

Session poster

TBA

Pré-journée pour les étudiant.es

Hanna Bacave - INRAE, MIAT - *TBA*

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Nicolas Enjalbert Courrech - IMT, CNRS - *TBA*

Comparaison de méthodes d'inférence post-clustering

Lilit Hovsepyan - Université Le Mans, Inrae Toulouse - *TBA*

Fast inference in copula regression models with categorical explanatory variables using one-step procedures

Sophia Yazzourh - IMT, Université Paul Sabatier - *TBA*

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