

APM 52188

Machine learning with Optimal Transport and Algorithmic Fairness

Rémi Flamary

remi.flamary@polytechnique.edu

Solenne Gaucher

solenne.gaucher@polytechnique.edu

DepMAP, CMAP, École polytechnique, IP Paris

Principle of the course

Objectives

- Introduction to modern topics in Machine Learning.
- Read scientific papers to learn and understand the methods.
- Implement the new methods.
- Present the methods and results.

In practice

- Course organized in two parts :
 1. Optimal transport for machine learning (OTML)
 2. Fairness and bias in machine learning
- For each part: Introduction to the fields (courses) and hands-on for simple problems (labs)
- Final project
 - Team of 3 students working on a recent scientific paper.
 - Final oral presentation (20 pres+10 Q&A) of the paper and the work to the class and a jury (Individual grades).