

Introduction to Machine Learning

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**15-19 October 2018 | 09:30 - 11:45 with a 15 min. break
(5 sessions amounting to a total of 10 hours)**

This course is an introduction to Machine Learning. Toy and real examples will be used to illustrate the steps for solving a ML problem. We will also illustrate new trends on ML through complex real-world problems.

In order to give the insights of ML, this course aims to be a hands-on approach to the most widely used ML techniques and algorithms. We will use Jupyter Notebooks in Python to illustrate the different methods.

OBJECTIVES:

- Get familiar with the different ML methods and applications.
- Understand the general workflow behind a ML application.
- Get the flavor of standard free software in the ML community.
- Discuss new trends and topics related to ML in industry and academia.

PROGRAMME:

1. Introduction
2. Data pre-processing
 - a. Data cleaning
 - b. Feature extraction and selection
3. Data processing
 - a. Clustering
 - b. Classification
 - c. Regression
4. Model selection and validation
5. Discussion and new trends

PREREQUISITES: There are no formal prerequisites, but some basic knowledge of Statistics is expected. Master and PhD students are encouraged to participate. The code used in class will be made available and the students are encouraged to bring their laptop. Information about required (free) software to install will be provided after the registration period by e-mail.

***Registration is free, but inscription is required before 10th October:** So as to inscribe go to <https://bit.ly/2LRd33n> and fill the registration form. Student grants are available. Please, let us know if you need support for travel and accommodation expenses when you fill the form.