

Project presentation and organisation

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Introduction to Machine Learning
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- ▶ **Three** projects are organised during the semester:
 - ▶ The first two are intended to put into practice the course material,
 - ▶ The third project is organized in the form of a student competition.
- ▶ Each project must be carried out by **groups of typically two** students.
- ▶ Each group should submit a **written report** and the **source code** of the solutions on the **Montefiore Submission Platform**.

Provisional agenda

- ▶ **Project 1:** Classical algorithms
 - ▶ Presented after lecture 2 (23/09)
 - ▶ Due by 18/10
- ▶ **Project 2:** Bias and variance analysis
 - ▶ Presented after lecture 5
 - ▶ Due by mid-November
- ▶ **Project 3:** Competition
 - ▶ Presented early- or mid-November
 - ▶ Due by mid-December

Project topics

The main goal of both first projects is to **put into practice the course material**.

- ▶ By answering **theoretical questions** and **carrying out experiments** on artificial data sets
- ▶ Sub-goals:
 - ▶ Project 1: to get accustomed to the basics of machine learning
 - ▶ Project 2: to help you to better understand the important notions of bias and variance

Project 3: Principle

The third project takes the form of a student competition:

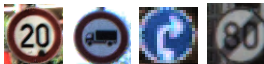
- ▶ **Goal:** to obtain the best performances on a real supervised learning problem.
- ▶ **During the competition:** possibility to test your predictions and a provisional ranking.
- ▶ **After the competition:** final ranking and debriefing/presentation.
- ▶ Practical details will be given in due time.

But...

- ▶ It requires to **actively follow** (and understand) the course as you will have to apply what you have learnt.
- ▶ This is a **long-drawn-out team job**. Starting a few days before the deadline or alone is not advised.

Project 3: Examples from last years (i)

- ▶ Road signs recognition



- ▶ Detection of abusive comments



- ▶ Whale cry identification



- ▶ Taxi Trajectory Prediction



Project 3: Examples from last years (ii)

- ▶ Activity prediction



- ▶ Spoken digits recognition



- ▶ Movie recommendation



- ▶ Activity prediction for chemical compounds

