Machine Learning for EO

VIRTUAL PART

Duration: **8 hours**

They will be structured in **4 lectures** (2 hrs each):

1. Introduction to Machine Learning and Bayesian Classifiers;
2. Artificial Neural Networks, Decision Trees and Voting Assemblies;
3. Unsupervised Learning and Genetic Algorithms;
4. Deep Learning.

The lectures will be **between April 20th and May 20th**, they will be on-line **from 6 to 7:30 PM** Italian time, will be recorded and available on-line for 15 days.

IN PRESENCE

3 groups of 5 or 6 students, each one with 1/2 students by each university, devoted to analyse one of these three environmental phenomena:

- Water extents of the Po river flowing south of Cremona during May-August 2022 (the lack of precipitations and the severe drought resulted in a big reduction of the water content in the river, down by more than 8 m w.r.t. the usual level);
- Soil temperature around and inside the city during May-August 2022 inside and outside the city (we suffered several "heat waves" in June and July);
- Status of the vegetation in the agricultural fields surrounding the city (several fields had to be left unattended due to the limitations in water for irrigation, with a "patchy" result for vegetation status).