Research - A Gentle Introduction to Decision Trees and Random Forests with Python and R

> Machine learning methods are nowadays used in a wide variety of applications. In this course, you will learn how the decision tree and random forest methods work and may be applied in practice by using either Python or R programming.

Objectives

Acquire the key competencies needed to apply decision tree and random forest methods to simple datasets

Target audience

Any PhD students, post-docs, researchers of UNIL who would like to use decision tree and random forest methods in their research

Content

At the end of the course, the participants are expected to:

- Understand how the decision tree and random forest algorithms work
- Run simple machine learning codes in Python or R
- Be able to choose properly the hyper-parameters of the models

Length

1 half-day

Organization

Once per year

Location

In-person only (no online option)

Practicals

The practicals can be done on the UNIL JupyterLab (available exclusively during this course and for one week following its completion), on your laptop (but you will need to install the required libraries), or on the UNIL cluster called Curnagl. See the installation page for more information.

Prerequisites

- Basic knowledge of statistics
- Be confortable with either Python or R programming

> IMPORTANT: To do the practicals
> - On UNIL JupyterLab: Access requires that you connect either via the eduroam Wi-Fi with your UNIL account or through the UNIL VPN. This point is especially crucial for researchers from the CHUV.
> - On your laptop: No account requirement
> - On Curnagl: Please register using your UNIL email address
> - Note that in all cases you need to bring your own laptop

Course dates and registration

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