UE Statistical learning: from parametric to nonparametric models

Niveau d'étude
Bac +5

ECTS
6 crédits

Crédits ECTS
Echange
6.0

Composante
UFR IM2AG
(informatique,
mathématiques
et
mathématiques
appliquées)

Période de
l'année
Automne (sept.
à dec./janv.)

> **Langue(s) d'enseignement:** Anglais

> **Ouvert aux étudiants en échange:** Oui

> **Crédits ECTS Echange:** 6.0

> **Code d'export Apogée:** GBX9AM78

Présentation

Description

This course is related to mathematical and statistical methods which are very used in supervised learning.

It contains two parts.

In the first part, we will focus on parametric modeling. Starting with the classical linear regression, we will describe several families of estimators that work when considering high-dimensional data, where the classical least square estimator does not work. Model selection and model assessment will particularly be described.

In the second part, we shall focus on nonparametric methods. We will present several tools and ingredients to predict the future value of a variable. We shall focus on methods for non parametric regression from independent to correlated training dataset. We shall also study some methods to avoid the overfitting in supervised learning.

This course will be followed by practical sessions with the R software.

Heures d'enseignement

CM	CM	36h

Pré-requis recommandés

basic probability statistical inference, linear model.

Période : Semestre 9

Infos pratiques

Contacts

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Campus

> Grenoble - Domaine universitaire