Introduction to Machine Learning

Academic Year: (2023 / 2024)   **Review date: 16-12-2023**

Department assigned to the subject: Signal and Communications Theory Department

Coordinating teacher: GOMEZ VERDEJO, VANESSA

Type: Additional training ECTS Credits : 2.0

Year : 0 Semester : 1

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

None

OBJECTIVES

The goal of this course is that the student acquires the basics of machine learning, knows some of the basic methods and learns the procedures for parameter selection and model evaluation.

DESCRIPTION OF CONTENTS: PROGRAMME

Python as a programming language for machine learning.
Machine learning pipeline: preprocessing, model training, parameter validation and evaluation metrics.
Linear and polynomial regression models.
Basic classification models: Logistic regression, decision trees.
Unsupervised learning: PCA and K-means.

LEARNING ACTIVITIES AND METHODOLOGY

AF3	Theoretical practical classes
AF4	Laboratory practices
AF5	Tutorials
AF6	Team work
AF7	Student individual work
AF8	Partial and final exams

METHODOLOGY
MD1: Class lectures by the professor with the support of computer and audiovisual media, in which the main concepts of the course are developed and complemented with bibliography.
MD2: Critical reading of texts recommended by the professor of the course.
MD3: Resolution of practical cases, problems, etc. .... posed by the teacher individually or in groups.
MD4: Presentation and discussion in class, under the moderation of the professor, of topics related to the content of the course, as well as case studies.
MD5: Elaboration of works and reports individually or in groups.

ASSESSMENT SYSTEM

The evaluation of the students will be carried out in a 60 % by means of continuous evaluation based on the resolution and delivery of team work. The remaining 40% will consist of a final theoretical-practical exam on the contents of the course and on the practices carried out.

SE2 Individual or group work or exams taken during the course 60%.
SE3 Individual partial/final exams 40%.

The extraordinary call will take place with a final exam that will weigh 100% of the mark.

% end-of-term-examination: 40

% of continuous assessment (assigments, laboratory, practicals…):   60