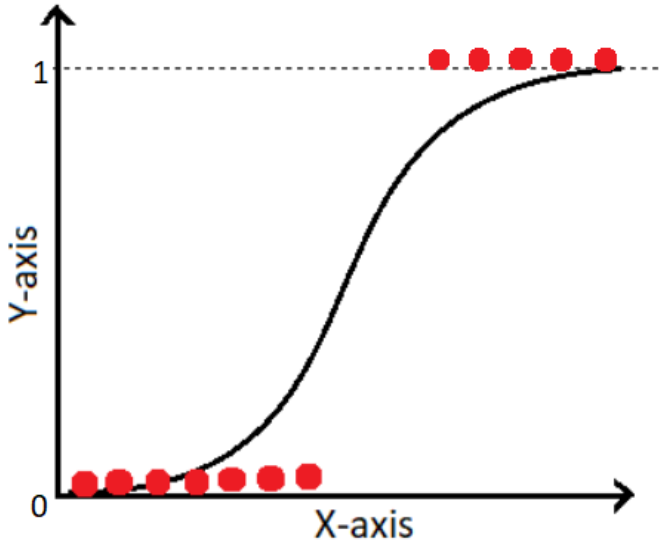
hugomcp@di.ubi.pt, 2024/25

Machine Learning

Practical Sheet 3: Logistic Regression



1. Your task for today's practical class, is to adapt the "linear_regression.py" script to perform logistic regression.

    - At first, implement only the "two-classes" version
    - Generalize your script, to handle multi-class problems.

    Also, consider different feature-normalization strategies:

    - Min-max
    - Z-score

    Download the data from the "**wine**" Dataset, available at the course web page.

    - In this set, the goal is to use chemical analysis to determine the origin of different wines.
    - There are 13 attributes, all numeric (either integer or real numbers):
        - *1) Alcohol*
        - *2) Malic acid*
        - *3) Ash*
        - *4) Alcalinity of ash*
        - *5) Magnesium*

- *6) Total phenols*
- *7) Flavanoids*
- *8) Nonflavanoid phenols*
- *9) Proanthocyanins*
- *10)Color intensity*
- *11)Hue*
- *12)OD280/OD315 of diluted wines*
- *13)Proline*

- The dependent variable is provided in the first column.