

Machine Learning, Winter 2022
Practice Assignment 2

Exercise 2-1 Discussion

- a) What are the β s? What is their functionality?

Exercise 2-2 OLS Linear Regression

Consider the 2-dimensional dataset given below:

Height (cm)	Weight (kg)
170	70
160	55
165	64
180	75
155	60

Find the coefficients of a linear regression model to predict the weight as a function of the height

Exercise 2-3 OLS Linear Regression 2

The instructor of some college courses shows to his students the following information on the GPA (Italian scale 18-30) and a test score obtained for 8 students at their college.

Student	GPA	Test Score
1	26	3
2	25	2.7
3	27	3.5
4	21	2.8
5	24	3.4
6	25	3.0
7	30	3.7
8	29	3.6

What is the predicted test score for a student with GPA = 20?

Exercise 2-4 Salary Predictor using Simple Linear Regression
Coding Question

- a) Import all the required libraries (ex. Numpy, pandas...etc.)
b) Read the OLS dataset
c) Produce a scatter-plot of the data

- d) Divide the dataset into training and testing data with an approximate ratio of 70/30 respectively
- e) **Create** a function that uses the train portion of the data to produce a program that predicts the *Salary* based on the *Years of Experience*
- f) Test the algorithm using the test portion of the data
- g) Bonus: What is an adequate *performance measure* for this model? → Implement it!

Exercise 2-5 Salary Predictor using Scikit-Learn
Coding Question

Using the same dataset, write a program that trains a sklearn Linear Regression model and test the performance by calculating its *accuracy*