

Lab - 1

CSL2010: Introduction To Machine Learning AY 2022-23

General Instructions

1. You need to upload a zip **<Your_Roll_No>.zip**, which contains one file for the task in **<Your_Roll_No>.py** format and the report for the entire assignment in **<Your_Roll_No>.pdf** format.
2. This assignment is non-graded however its submission is mandatory.
3. Provide your colab file link in the report. **Make sure that your file is accessible.**
4. Submit a single report, mentioning your observations for all the tasks. [Include plots]
5. Report any resources you have used while attempting the assignment.

Q1: A CSV file has been provided to you at this [link](#). The given dataset is related to superstore products and contains 21 columns. In the given dataset, “Sales” is the target variable (i.e., the output).

- i) Load the CSV data with the help of pandas and report the information regarding column labels, column data types, memory usage, the number of non-null values in each column and statistical details like mean, count, and standard deviation.
- ii) Find out the numerical and categorical features from the data.

Q2: With the help of NumPy operations, solve the following questions.

- i) Create an array of random floats with a range starting from 0 to 2.
- ii) Show the standard deviation and mean of the above-generated data.
- iii) Generate a random matrix of size (3,3) and find out the determinant, inverse, eigen values, and eigen vectors of that.

Q3 (OPTIONAL): Using the webcam on your laptop/computer, read and save a photograph of yourself using any one of the following libraries: OpenCV/Python Pillow /Scikit Image

Resources:

1. <https://numpy.org/doc/stable/reference/>