

Indian Institute of Technology, Jodhpur

Machine Learning-1 | Assignment-1

Evaluation Metrics

Marks : 80 + 20 (Report)

Due Date : 04/03/2021

Submission Policy :

- Any kind of plagiarism is not accepted. We will strictly follow institute policies for plagiarism.
 - Recommended Programming language : Python + Pandas (for reading csv file) + Sklearn (for comparison)
 - Submission should include : working code for all parts and a single pdf report for all questions,
 - Question 1 is theoretical and Question 2 needs to be implemented using python.
 - Submit a single zip file consisting of all codes and a report for both questions.
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Question 1

15 Marks

Explain any three new evaluation metrics (other than discussed in class) with proper explanation and analysis. (30)

Question 2

65 Marks

Dataset : [Data link](#) (use Pandas to read this excel file)

Aim : Evaluate the performance of the predictions using different evaluation metrics:

Note (a. to e.) : Do not use any predefined library for calculating a. to e. All the evaluation should be done from scratch.

- a. Calculate overall accuracy and class-wise accuracy. (5)
- b. Calculate confusion metrics. (10)
- c. Calculate precision and recall for all classes and report macro average and weighted average values. (10)

- d. calculate F1 score for all classes. **(10)**
- e. Report Type-1 and Type-II error for given data. **(10)**
- f. Draw a comparison table between above determined values and values observed from sklearn library (predefined library for performance evaluation). **(10)**
- g. Use any 2 metrics from Question 1 for implementation and report your results for this dataset. **(10)**