**Mini-Project:Machine Learning on Data-set using[Weka or Scikit-learn]**

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The ML project is to implement some of the metrics of single label classification and test them on some datasets.

The steps need to be followed are following:

1.Download any one dataset of your choice from the below given links.

2.Write a code (in any programming language) to divide the dataset into k folds.(where k is an user input)[This we will use later for cross validation]

3.Take each fold from the above generated files and do the following:

i)Train a model of your choice( you can use any single label classifier of your choice) using the Weka tool OR scikit-learn.

ii)Test the the model(using the validation set of each fold) and generate the predicted file.

iii)Write a program(in any programming language of your choice) to calculate/predict the following given metrics of single label classifiaction.The input to the program will be the two files(namely the Test file and the predicted
file generated in step ii)

METRICS(to be implemented):
a)Sensitivity or True Positive Rate
b)Specificity (SPC) or True Negative Rate

c)Precision
d)Recall
e)F1-score
f)Accuracy
g)Log Loss
h)Error Rate
i)Mean Squared Error

BONUS:If you can show the Confusion matrix.

4.For each of the following metrics inplemented above, show the result taking average over all the folds.

5.Plot the graphs of accuracy and loss.

6.Project Report: Describe about data-set, machine learning, experiments and results.

DATASET LINKS:
EEG Eye State Data Set: https://archive.ics.uci.edu/ml/machine-learning-databases/00264/