Assignment-2
Introduction to Machine learning

March 14, 2021

Instruction

a)Student's with odd enrollment will do implementation on odd data sets(Dataset 1 and 3) and even enrollment id's will choose even data sets(Dataset 2 and 4).

b)All have to prepare the report (result analysis) in latex.

c)Upload your file with file name as per your enrollment number.

Questions

1. Create an ANN with one hidden layer and do classification on the datasets given in the link.(

https://archive.ics.uci.edu/ml/datasets /Statlog+(Landsat+Satellite)

https://archive.ics.uci.edu/ml/datasets/Breast+Cancer+ Wisconsin+%28Diagnostic%29

https://github.com/EpistasisLab/pmlb/tree/master/datasets/iris

https://github.com/EpistasisLab/pmlb/tree/master/datasets/titanic)

i) Plot a graph of accuracy vs. the number of hidden units.(64,128,256,512)

ii) Plot a graph of accuracy vs. activation function.(Relu,logistic sigmoid,tanh,leaky Relu)

iii) Plot a graph comparing the following three loss functions vs accuracy

a)Multi-Class Cross-Entropy Loss

b)Sparse Multiclass Cross-Entropy Loss

c)Kullback Leibler Divergence Loss

2.Implement SVM from scratch on the above datasets and plot a graph for the given kernel functions:

i)Linear kernel vs accuracy

ii)Polynomial kernel vs accuracy

iii)Gaussian RBF kernel vs accuracy