CS5101 Machine Learning

August-December 2021

Programming Assignment - 10

Topic: Multiview Learning

Follow the instructions carefully before attempting:

- You must submit your code in a single python .ipynb notebook with naming format as follows: Firstname_Lastname_assignment10.ipynb
- For each question, create a separate text block containing the question followed by a code block containing the solution.
- Follow each and every instruction given in each question carefully.
- Your code must be properly commented explaining each step clearly.
- If any of the above instructions are not followed, penalty will be there for the same
- Your code and answers will be checked for plagiarism and if found plagiarised, zero marks will be provided for assignment 10. So make sure you actually code and solve the questions rather than noting down the answers

Task:[5 marks]

Create a 2-view dataset from a Gaussian mixture model and a transformation using mvlearn multiview datasets with a sample_size = 100 and centers at [-1, 0] and [1, 0]. Separately perform train-test split for both the views of this dataset and, for each view perform co-training classification with two estimator types for each of the following cases as mentioned below:

Case-1: estimator-1 = KNeighborsClassifier(n_neighbors = 3) and,
estimator-2 = RandomForestClassifier()

Case-2: estimator1 = GaussianNB() and,
estimator2 = LogisticRegression()

Subsequently, report the accuracy values obtained from the above two cases, for each of the views as obtained above.