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Graded Assignment
Practice Assignment 8.2 - Not Graded Assignment
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Graded Assignment - 8 (PART - B)

The due date for submitting this assignment has passed.
Due on 2024-03-17, 23:59 IST.
You may submit any number of times before the due date. The final submission will be considered for grading.

You have last submitted on: 2024-03-14, 23:35 IST

1) Write a function compute_GridSearchCV which accepts the Kernel and regularization parameters as inputs and returns the Mean cross-validated score of the best_estimator, denoted with best_score_ of the models with the below-mentioned hyperparameters: *1 point*
Split the Iris dataset into train and test sets with 70:30 ratio
Import svm.SVC as 'model'
kernels = ['linear' , 'rbf']
Regularization = [1,15,25]
gamma = 'auto'
Cross Validation = 4
random_state=0
Note: Mark the closest option.

- (•) 0.98
- ( ) 0.81
- ( ) 0.79
- ( ) 0.11

Yes, the answer is correct.
Score: 1

Accepted Answers:

0.98

(Common data for Q 2 and Q3)

Read the instructions given below to answer the two questions given below.

Split the Social_Network_Ads dataset (https://drive.google.com/file/d/1qUa1GlG4X4ZY_4E0e7jPR-z7AG7NIDbE/view?usp=sharing) into training and test set in 75:25 ratio.
Fit and transform the train and test set of the feature matrix by applying StandardScaler transformer.
Fit a linear SVM (with random_state = 0and linear kernel) to training data.

2) The predicted data returns an accuracy_score on test data. Which of the following option represents the calculated accuracy_score? *1 point*

- (•) 0.9
- ( ) 0.99
- ( ) 0.77
- ( ) 1.20

Yes, the answer is correct.
Score: 1

Accepted Answers:

0.9

3) Calculate the confusion matrix obtained from the above-predicted data. *1 point*

- ( ) [[5 63] [7 25]]
- (•) [[66 2] [8 24]]
- ( ) [[63 5] [25 7]]
- ( ) [[5 63] [25 7]]

Yes, the answer is correct.
Score: 1

Accepted Answers:

[[66 2] [8 24]]

From the MNIST dataset, consider the first 20,000 data samples as training data and the next 5,000 data samples as test data. Fit a pipeline with MinMaxScaler and a classifier with SVC, linear kernel, one vs rest decision_function_shape and `class_weight`=None to this dataset and answer the following questions(Q.no 4 and Q.no 5).

4) What is the sum of the main diagonal elements of the confusion matrix? *1 point*

- 4523
- 4423
- 4623
- 4693

Yes, the answer is correct.
Score: 1

Accepted Answers:

4623

5) Which of the following are the correct values of precision, recall and f1_Score? ***1 point***

- Precision: 0.90 Recall: 0.89 f1_Score: 0.90
- Precision: 0.99 Recall: 0.99 f1_Score: 0.99
- Precision: 0.92 Recall: 0.92 f1_Score: 0.92
- Precision: 0.14 Recall: 0.14 f1_Score: 0.14

Yes, the answer is correct.
Score: 1

Accepted Answers:

Precision: 0.92 Recall: 0.92 f1_Score: 0.92

6) Consider the MNIST dataset, split it into training and test set in 50:50 ratio with random_state = 42. Fit a SVM model using pipeline with StandardScalar, SVM classifier kernel='poly' and degree = 3, decision_function_shape='ovr'and class_weight='balanced', C=10. Train the model on training data, and make predictions for test data. Generate the Classification report and choose the correct value for weighted avg of f1_score. ***1 point***

- 0.96
- 0.97
- 0.98
- 0.99

Yes, the answer is correct.
Score: 1

Accepted Answers:

0.97

7) Write the function compute_score(X_train, y_train, X_test, y_test) to do the following on the Iris dataset- ***1 point***

Write your code keeping in mind:
Split the Iris dataset into train and test set with 70:30 ratio (Take random state value as 42)
Import svm.SVC as 'model'
kernel as 'poly', regularization parameter as 10 and gamma as 'auto'
Train the model and mark the computed accuracy score for test data.

- 2.0
- 1.0
- -1.0
- -2.0

Yes, the answer is correct.
Score: 1

Accepted Answers:

1.0

8) Write the function compute_score(X_train, y_train, X_test, y_test) to do the following on the Iris dataset- ***1 point***

Write your code keeping in mind the following:
Split the Iris dataset into train and test sets with 70:30 ratio(Take random state value as 42)
Import svm.SVC as 'model'
kernel as 'sigmoid', regularization parameter as 25, and gamma as 'auto'
Train the 'model' and mark the computed 'accuracy score' for the test data.'

Note: Mark the closest option.

- 0.28
- 0.95

- 0.81
- 0.75

Yes, the answer is correct.
Score: 1

Accepted Answers:

0.28

9) Import the iris dataset and drop the rows where class=Iris-setosa. Apply a pipeline containing a MinMaxScaler()function calledScaler and a svm.svc() called classifier. Split the iris dataset into 75:25 ratio with random_state=0. Mark the correct precision score. ***1 point***

- 0.00
- 1.22
- 0.96
- 2.33

Yes, the answer is correct.
Score: 1

Accepted Answers:

0.96