CSPB 4622 - Truong - Machine Learning

Started on	Monday, 23 September 2024, 4:14 PM
State	Finished
Completed on	Monday, 23 September 2024, 4:18 PM
Time taken	3 mins 55 secs
Marks	8.00/8.00
Grade	**10.00** out of 10.00 (**100**%)

Question **1**

Correct

Mark 1.00 out of 1.00

Choose the correct answers from the following on the functionality of the models (multiple answers allowed):

- a. In Boosting, the models are built independent from each other
- b. In Bagging, the models are built independent from each other ✔
- c. In Boosting, the models are built dependent on the previous models ✔
- d. In Bagging, the models are built dependent on the previous models

Question **2**

Correct

Mark 1.00 out of 1.00

Which of the following techniques can lead to high variance or overfitting of the model (multiple answers allowed):

a. Single Decision Trees ✔

b. Bagging

c. Boosting ✔

Question **3**

Correct

Mark 1.00 out of 1.00

The main purpose of ensembling models is that a single Decision Tree is highly biased and ensembling overcomes this underfitting nature. Select one.

a. True

b. False ✔

Question **4**

Correct

Mark 1.00 out of 1.00

Choose the correct options about Bagging and AdaBoost (Select one or more):

a. The partitioning of data in Bagging is random. ✔

b. The partitioning of data in AdaBoost is random.

c. The partitioning of data in Bagging is more weighted towards misclassified samples.

d. The partitioning of data in AdaBoost is more weighted towards misclassified samples. ✔

Question **5**

Correct

Mark 1.00 out of 1.00

The generalization error will not increase when more trees are included in the random forest model.

- (•) a. True ✔
- ( ) b. False

Question **6**

Correct

Mark 1.00 out of 1.00

What can you do to decrease correlations of the Random Forest tree ensembles?

- (•) a. Reduce the max number of features ✔
- ( ) b. Increase max depth of the base estimator
- ( ) c. Increase the number of estimators
- ( ) d. Reduce the number of estimators

Question **7**

Correct

Mark 1.00 out of 1.00

You found that your gradient boosting model overfits. What can you try to reduce overfitting?

- [ ] a. Increase learning rate
- [x] b. Decrease number of estimators ✔
- [x] c. Decrease the max depth of the base estimator (decision tree) ✔

Question **8**

Correct

Mark 1.00 out of 1.00

The random forest ✔ model uses an ensemble of trees. To decorrelate the trees, it uses bagging ✔ and random subset of the features ✔ .