MACHINE LEARNING -ASSIGNMENT 39

1.A

2.A

3.B

4.B

5. C

6.B

7.D

8.C

9.C

10.B

11.A

12. A & B

13. A model can face two pertinent problems underfitting as well as overfitting that occur due to bias and variance issues. High bias and low variance cause underfitted models; whereas low bias and high variance cause overfitted models. These are important to be taken care of as an underfitted model means that the model has not picked all learning patterns and is not trained to predict well, and a overfitted model is trained too much that the results generated are too good to be true. While underfitting is an issue, overfitting There are 3 techniques of regularisation : lasso, ridge and elastic net regularisation.

14. Algorithms used for regularisation are Lasso Regularisation, Ridge Regularisation and Elasticnet Regularisation which is a combination of Lasso and Ridge Regularisation. Lasso adds to the loss function a value which is the absolute value of the coefficients of the model such that the less important coefficients are shrinked to zero. Ridge adds to the loss function a value which is equal to the square of coefficients and shrinks the coefficients of the model towards zero.

15. Error in linear regression is basically the difference between observed and predicted values . it is denoted by the term ‘e’ in a linear equation. The smaller the error, the higher is the model accuracy.

If y = b0+a1x1+ b2x2+…..+bnxn + e

Then y = dependent or response variable, x1, x2 ….xn are independent or predictor variables, b0 is the intercept, a1, a2 are coefficients.

There are 3 types of errors in linear regression

Mean Squared Error (MSE)

Mean Absolute Error(MAE)

Root Mean Squared Error(RMSE)