ASSIGNMENT – 39

MACHINE LEARNING

In Q1 to Q11, only one option is correct, choose the correct option:

1. Which of the following methods do we use to find the best fit line for data in Linear Regression?

A) Least Square Error B) Maximum Likelihood

C) Logarithmic Loss D) Both A and B

Ans : A

2. Which of the following statement is true about outliers in linear regression?

A) Linear regression is sensitive to outliers B) linear regression is not sensitive to outliers

C) Can't say D) none of these

Ans : A

3. A line falls from left to right if a slope is _____?

A) Positive B) Negative

C) Zero D) Undefined

Ans: B

4. Which of the following will have symmetric relation between dependent variable and independent variable?

A) Regression B) Correlation

C) Both of them D) None of these

Ans: B

5. Which of the following is the reason for over fitting condition?

A) High bias and high variance B) Low bias and low variance

C) Low bias and high variance D) none of these

Ans: C

6. If output involves label then that model is called as:

A) Descriptive model B) Predictive modal

C) Reinforcement learning D) All of the above

Ans: B

7. Lasso and Ridge regression techniques belong to _____?

A) Cross validation B) Removing outliers

C) SMOTE D) Regularization

Ans: D

8. To overcome with imbalance dataset which technique can be used?

A) Cross validation B) Regularization

C) Kernel D) SMOTE

Ans: C

9. The AUC Receiver Operator Characteristic (AUCROC) curve is an evaluation metric for binary classification problems. It uses _____ to make graph?

A) TPR and FPR B) Sensitivity and precision

C) Sensitivity and Specificity D) Recall and precision

Ans: A

10. In AUC Receiver Operator Characteristic (AUCROC) curve for the better model area under the curve should be less.

A) True B) False

Ans: B

11. Pick the feature extraction from below:

A) Construction bag of words from a email

B) Apply PCA to project high dimensional data

C) Removing stop words

D) Forward selection

Ans: A,B,C

In Q12, more than one options are correct, choose all the correct options:

12. Which of the following is true about Normal Equation used to compute the coefficient of the Linear Regression?
A) We don't have to choose the learning rate.
B) It becomes slow when number of features is very large.
C) We need to iterate.
D) It does not make use of dependent variable.
Ans: A & B

ASSIGNMENT – 39

MACHINE LEARNING

Q13 and Q15 are subjective answer type questions, Answer them briefly.

13. Explain the term regularization?
Ans: Regularization are techniques used to reduce the error by fitting a function appropriately on the given training set and avoid overfitting.

14. Which particular algorithms are used for regularization?
Ans: Mainly, there are two types of regularization techniques, which are given below:
1- Ridge Regression
2- Lasso Regression

Ridge Regression- Ridge regression is one of the types of linear regression in which we introduce a small amount of bias, known as Ridge regression penalty so that we can get better long-term predictions. In Statistics, it is known as the L-2 norm.

Lasso Regression- Lasso regression is another variant of the regularization technique used to reduce the complexity of the model. It stands for Least Absolute and Selection Operator. In statistics, it is known as the L-1 norm

15. Explain the term error present in linear regression equation?

Ans: Term Error is the difference between the actual value and Predicted value and the goal is to reduce this difference.

Let's understand this with the help of a diagram.