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) Least Square Error

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) Linear regression is sensitive to outliers

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

A) Positive B) Negative

C) Zero D) Undefined

Ans.: B) Negative

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) Correlation

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.: A) High bias and high variance

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) Predictive modal

7. Lasso and Ridge regression techniques belong to _____?

A) Cross validation B) Removing outliers

C) SMOTE D) Regularization

Ans.: D) Regularization

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

A) Cross validation B) Regularization

C) Kernel D) SMOTE

Ans.: D) SMOTE

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) TPR and FPR

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) False

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.: D) Forward selection

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) , and C)

ASSIGNMENT – 39

MACHINE LEARNING

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

13. :Explain the term regularization?

Ans.: The word regularize means to make things regular or acceptable. This is exactly why we use it for. Regularization is a technique used to reduce the errors by fitting the function appropriately on the given training set and avoid overfitting.

14. Which particular algorithms are used for regularization?

Ans.:

- Ridge Regression.
- LASSO (Least Absolute Shrinkage and Selection Operator) Regression.
- Elastic-Net Regression.

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

Ans.: It is often said that the error term in a regression equation represents the effect of the variables

that were omitted from the equation. This is unsatisfactory, even in simple contexts, as the following

discussion should indicate. Suppose subjects are IID, and all variables are jointly normal with expectation 0. Suppose the explanatory variables have variance 1. The explanatory variables may be correlated amongst themselves, but any p of them have a non-singular p-dimensional distribution.