FLIP ROBO

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. A) Positive

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. C) Low 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

MACHINE LEARNING

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. B) Apply PCA to project high dimensional data

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) We don't have to choose the learning rate.

B) It becomes slow when number of features is very large.

MACHINE LEARNING

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

13. Explain the term regularization?

Ans: In general, the term "regularization" refers to the process of making something regular or acceptable. The method of regularization involves shrinking or regularizing the coefficients towards zero. To put it another way, regularization prevents overfitting by discouraging the learning of a more complicated or flexible model.

For eg: For linear regression model

$Y= A+BX+CX\_2+DX\_3+E$…….

Where Y is the dependent variable

X is the independent variable

And A, B,C,D are the coefficients or the weights assigned to the features

Now, we need a loss function and optimal parameters, such as bias and weights, to construct a model that reliably predicts the value of Y.

14. Which particular algorithms are used for regularization?

Ans: There are three particular algorithms used for regularization:

- L1 regularization (LASSO (Least Absolute Shrinkage and Selection Operator) Regression)

- L2 regularization (Ridge regression)

- Dropout regularization

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

Ans: The term present in linear regression equation which is also known as the standard error of the estimate. It basically represents the average distance of the observed values that fall from the regression line. Accessibly, it tells us how erroneous our regression model is on average using the units of the response variable. The smaller the values, the better as it depicts that the observations are nearer to the fitted line.