

MACHINE LEARNING

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

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

Ans: A) Least Square Error

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

Ans: A) Linear regression is sensitive to outliers

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

Ans: B) Negative

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

Ans: B) Correlation

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

Ans: C) Low bias and high variance

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

Ans: B) Predictive modal

7. Lasso and Ridge regression techniques belong to _____?

Ans: D) Regularization

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

Ans: D) SMOTE

9. The AUC Receiver Operator Characteristic (AUCROC) curve is an evaluation metric for binary

Ans: C) Sensitivity and Specificity

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

Ans: B) False

11. Pick the feature extraction from below:

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?

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

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

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

13. Explain the term regularization?

Ans: Regularization techniques are used to calibrate the linear regression models in order to minimize the adjusted loss function and prevent overfitting or underfitting. Regularization helps to reduce the variance of the model, without a substantial increase in the bias. We have 2 types of regularization: L1= Lasso and L2- Ridge.

14. Which particular algorithms are used for regularization?

Ans: L1: Lasso: Lasso finds the relation between the feature and the label and lowers the imp or weightage of the least important feature to 0. L2: Ridge: Ridge also does the same thing but does not lower the importance to 0 however gives minimum importance.

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

Ans: A Linear Regression model's main aim is to find the best fit linear line and the optimal values of intercept and coefficients such that the error is minimized. Error is the difference between the actual value and Predicted value and the goal is to reduce this difference. $\text{Residual/Error} = \text{Actual values} - \text{Predicted Values}$

1.