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?
   Least Square Error
2. Which of the following statement is true about outliers in linear regression?
   Linear regression is sensitive to outliers
3. A line falls from left to right if a slope is_____?
   Negative
4. Which of the following will have symmetric relation between dependent variable and independent variable?

   Both of them
5. Which of the following is the reason for over fitting condition?
   none of these
6. If output involves label then that model is called as:
   Predictive modal
7. Lasso and Ridge regression techniques belong to_____?
   Regularization
8. To overcome with imbalance dataset which technique can be used?
   SMOTE
9. The AUC Receiver Operator Characteristic (AUCROC) curve is an evaluation metric for binary classification problems. It uses_____to make graph?

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

    True
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

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?
    We don't have to choose the learning rate, It becomes slow when number of features is very large. And We need to iterate.

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

13. Explain the term regularization?

Regularization in Deep Learning is very important to overcome overfitting. When your training accuracy is very high, but test accuracy is very low, the model highly overfits the training dataset set and struggle to make good predictions on test dataset.

14. Which particular algorithms are used for regularization?

There are three main regularization techniques, namely:

Ridge Regression (L2 Norm)

Lasso (L1 Norm)

Dropout

Ridge and Lasso can be used for any algorithms involving weight parameters, including neural nets. Dropout is primarily used in any kind of neural networks e.g. ANN, DNN, CNN or RNN to moderate the learning. Let's take a closer look at each of the techniques.

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

Within a linear regression model tracking a stock's price over time, the error term is the difference between the expected price at a particular time and the price that was actually observed.