

MACHINE LEARNING

Q1-Q11

Ans1 = A

Ans2 = A

Ans3 = C

Ans4 = B

Ans5 = C

Ans6 = B

Ans7 = D

Ans8 = D

Ans9 = C

Ans10 = A

Ans11 = B

Q12

Ans12 = A and B

Q13-Q15

Q13 Explain the term regularization?

Ans: Regularization refers to techniques that are used to calibrate machine learning in order to minimize the adjusted loss function and prevent overfitting or underfitting. Regularization is a technique used in regression to reduce the complexity of the model and shrink the coefficient of the independent features.

Q14 which particular algorithms are used for regularization?

Ans: There are three main regularization algorithms:

- ❖ Ridge regression: it is a method of analyzing data that suffers from multi-collinearity. Ridge regression adds a penalty (L2 penalty) to the loss function that is equivalent to the square of the magnitude of the coefficients.
- ❖ Lasso: it is a regression analysis method that performs both feature selection and regularization in order to enhance the prediction accuracy of the model. Lasso regression adds a penalty (L1 penalty) to the loss function that is equivalent to the magnitude of the coefficient.
- ❖ Elastic-net regression: it is a regularized regression method that linearly combines the (L1 & L2) penalties of the ridge and lasso methods respectively.

The working of all these algorithms is quite similar to that of linear regression, it's just the loss function that keeps on changing.

Q15 Explain the term error present in the linear regression equation?

Ans: Linear regression is a form of analysis that relates to current trends experienced by particular security or index by providing a relationship between dependent and independent variables.

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

Linear regression most often uses mean-square error (MSE) to calculate the error of the model.