

Machine learning

- (1)(a) least square error
- (2)(a) linear regression is sensitive to outliers
- (3)(b) negative
- (4)(b) correlation
- (5)(c) low bias and high variance
- (6)(d) all of the above
- (7)(d) regularization
- (8)(a) cross validation
- (9)(a) tpr and fpr
- (10) (B) false
- (11) (B) apply PCA to project high dimensional data
- (12) (a) & (b)

(A) we don't have to choose the learning rate.

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

(13) this is a type of relapse, that compels/regularizes or contracts the coefficient gauges towards nothing. At the end of the day, this strategy debilitates learning a more intricate or adaptable model, to keep away from the danger of overfitting.

(14) there are 2 particular algorithms are used for regularization:

Lasso regression

The word "LASSO" denotes least absolute shrinkage and selection operator. Lasso regression follows the regularization technique to create prediction. It is given more priority over the other regression methods because it gives an accurate prediction. Lasso regression model uses shrinkage technique. In this technique, the data values are shrunk towards a central point similar to the concept of mean. The lasso regression algorithm suggests a simple, sparse models (i.e., Models with fewer parameters), which is well-suited for models or data showing high levels of multicollinearity or when we would like to automate certain parts of model selection, like variable selection or parameter elimination using feature engineering.

Ridge regression

Ridge regression is another type of regression algorithm in data science and is usually considered when there is a high correlation between the independent variables or model parameters. As the value of correlation increases the least square estimates evaluates unbiased values. But if the

collinearity in the dataset is very high, there can be some bias value. Therefore, we create a bias matrix in the equation of ridge regression algorithm. It is a useful regression method in which the model is less susceptible to overfitting and hence the model works well even if the dataset is very small.

(15) A blunder term is A remaining variable delivered by A factual or numerical model, which is made when the model doesn't completely address the real connection between the free factors and the ward factors. Because of this deficient relationship, the mistake term is the sum at which the condition might contrast during experimental investigation.