Machine Learning

Assignment(answers)

1.d)Both a and b

2.a)linear regression is sensitive to outliers

3.b)negative

4.c)both of them

5.c)low blas and high varience

6.b)predictive model

7.d)regularization

8.d)smote

9.a)tpr and fpr

10.b)false

11.a)construction bag of words from an email

12.b)it becomes slow when number of features is very large

13.**L1 Regularization(lasso):**

- Adds the absolute values of the coefficient to the objective functions.
- Encourages sparsity by casuing some coefficients to become exactly zero.

L2 Regularization(ridge):

- Adds the squared values of the coefficients to the objective functions.
- Encourages small and distributed values for all coefficients.

14.Linear regression with lasso(L1) and ridge(L2):

- Both lasso and ridge regression add regularization terms to the linear regression objective function.

Logistic regression with L1 and L2 regularization:

- Similar to linear regression , logistic regression can use L1 or L2 regularization to prevent overfitting.

Support vector machines(SVM):

- SVMs can use regularization through the parameter C , which controls the trade-off between achieving a low training error and a low model complexity.