

Assignment 2

1) What is the difference between linear regression and logistic regression.

Ans.

Linear Regression.	Logistic Regression.
1) A linear approach that models the relationship between a dependent variable and one or more independent variables.	A statistical model that predicts the probability of an outcome that can only have 2 values.
2) Used to solve regression problems.	Used to solve classification problems. (binary classification).
3) Estimates the dependent variable when there is a change in the independent variable.	Calculates the possibility of an event occurring.
4) Output value is continuous.	Output value is discrete.
5) Uses a straight line.	Uses an S curve or sigmoid function.
6) Example: predicting the GDP of a country, predicting product price, predicting the house selling price, slope prediction.	Example: predicting whether an email is spam or not, predicting whether the credit card transaction is fraud or not, predicting whether a customer will take a loan or not.

2) Give some real life SVM applications.

Ans. Some common applications of SVM are:

- i) Face detection - SVM classifies pixels of the image as a face and non-face and create a square boundary around the face.

ii) Text and hypertext categorization - SVMs allow Text and hypertext categorization for both inductive and transductive models. They use training data to classify documents into categories.

iii) Handwriting recognition - SVM is used to recognize handwritten characters used widely.

iv) Bioinformatics - It includes protein and cancer classification. SVM is used for identifying the classification of genes, patients on the basis of genes and other biological problems.

v) Classification of images - Use of SVMs provide better search accuracy in comparison to the traditional query-based searching techniques.