Week 6: Daily Morning Challenge

Day 1: Tuesday 6th February 2020

Question 1: Briefly explain the difference between Linear, Multivariate and Logistic Regression

Regression is a technique used to predict the value of a response (dependent) variables, from one or more predictor (independent) variables, where the variable are numeric. There are various forms of regression such as linear, multiple, logistic etc. Linear and Logistic regression are the most basic form of regression, which are commonly used.

The linear regression technique involves the continuous dependent variable and the independent variables can be continuous or discrete. By using best fit straight line linear regression sets up a relationship between dependent variable (Y) and one or more independent variables (X). In other words, there exist a linear relationship between independent and dependent variables.

The logistic regression technique involves dependent variable, which can be represented in the binary (0 or 1, true or false, yes or no) values, means that the outcome could only be in either one form of two. For example, it can be utilized when we need to find the probability of successful or fail event.

Multivariate Regression is a method used to measure the degree at which more than one independent variable (predictors) and more than one dependent variable (responses), are linearly related. The method is broadly used to predict the behaviour of the response variables associated to changes in the predictor variables, once a desired degree of relation has been established.

The essential difference is that Logistic regression is used when the dependent variable is binary in nature. In contrast, linear regression is used when the dependent variable is continuous and nature of the regression line is linear. Linear regression requires establishing the linear relationship between dependent and independent variable whereas it is not necessary for logistic regression.

The difference between linear and multiple linear regression is that the linear regression contains only one independent variable while multiple regression contains more than one independent variables. The best-fit line in linear regression is obtained through least square method.