Module 3 – Supervised Learning

Date 3rd April, 2021

Quiz 03 – 5 marks

Q1. Define precision and recall. Give examples of cases where each one of them should be used to measure performance of the model.

Q2. State the difference between classification and regression models

Q3. How do we come up with a decision boundary/ hyper plane in SVM?

Q4. Explain bias and variance with reference to over fit and under fit models.

A1. Precision refers to the percentage of the results which are relevant, recall refers to the percentage of total relevant results correctly classified by your algorithm. When a search engine returns 20 pages, only 10 of which are relevant, while failing to return 30 additional relevant pages, its **precision** is 10/20 = 1/2, which tells us how valid the results are, while its **recall** is 10/30 = 1/3, which tells us how complete the results are.

A2. Classification is about predicting the label however regression is about predicting the quantity.

Classification is used to predict discrete class label whereas regression models are used to predict continuous quantity output.

A3. We look for the points that are closest to the line from both the classes. These points are called support vectors.

A4. Bias is the difference between the average prediction of our model and the correct value which we are trying to predict whereas Variance is the variability of model prediction for a given data point or a value which tells us spread of our data.