Positive class: Benign packet

Negative Class: Attack packet

True Positive: Benign packets classified as benign

True Negative: Attack packets classified as attack

False Positive: Attack packets classified as Benign

This type of classification leads to disastrous consequences because in this type of classification we classify attack packets as legitimate packets and do processing into our system, this can lead to many consequences to the system, which can lead to any failures and denial of service into our system.

False Negative: Benign Packets classified as Attack packets

This type of attack leads to the denial of service because in this type of classification we classify benign packets as attack packets and do not process these packets any further no callback is sent to the source of origin of the packet, this will be a denial of service to the legitimate users, which is what we are trying to minimize through our system.

**Below, TP, FN, FP and TN represent the number of true positives, false negatives, false positives and true negatives**

**Accuracy** is the number of correctly predicted data points out of all the data points. More formally, it is defined as the number of true positives and true negatives divided by the number of true positives, true negatives, false positives, and false negatives

**Accuracy** **= (TP + TN)/(TP + TN + FP + FN).**

A true positive or true negative is a data point that the algorithm correctly classified as true or false, respectively. A false positive or false negative, on the other hand, is a data point that the algorithm incorrectly classified.

True positive rate (TPR) . It is the proportion of positive instances classified correctly:

**TPR = TP/(TP + FN)**

where TP is the number of positive instances correctly classified and FN is the number of positive instances misclassified.

False positive rate (FPR) : It is the proportion of negative instances classified incorrectly:

**FPR =FP/(FP+TN)**

where FP is the number of negative instances incorrectly classified and TN is the number of negative instances correctly classified.

The false negative rate is the proportion of the individuals with a known positive condition for which the test result is negative. This rate is sometimes called the miss rate.

**FNR = FN / (TP+ FN)**

true negative rate measures the proportion of actual negatives that are correctly identified

**TNR = TN/TN+FP**