The learning rate shrinks the contribution of each tree. There is a trade-off between the learning rate and n\_estimators. The n\_estimators is the number of boosting stages to perform. Gradient boosting is fairly robust to over-fitting so a large number usually results in better performance. Also, the maximum depth parameter limits the number of nodes in the tree. we tune this parameter for the best performance

In the figure (\*) we plot the score of four different evaluation metric and compare them with each other

Table (\*) shows us quantitative results of each classifier.

Comparison results between proposed classifier and four other methods.

illustrated in the

Figure (\*) depicts