

## **PERFORMANCE METRICS**

1)

	Precision	Recall	f1-score	support
0.0	0.99	0.60	0.75	23573
1.0	0.03	0.60	0.06	472
avg/total	0.97	0.60	0.73	24045

2)

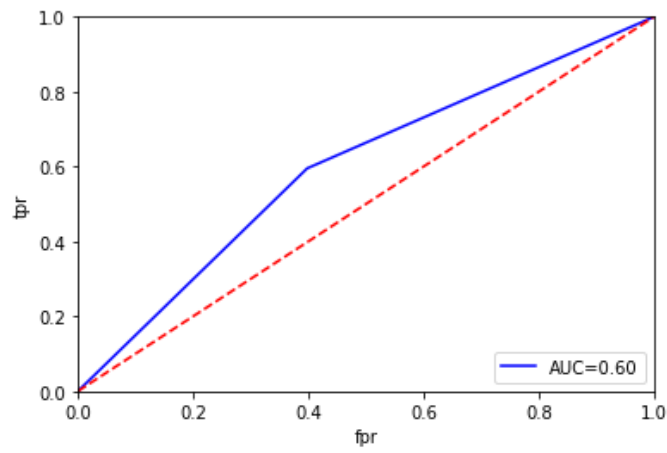
	Precision	Recall	f1-score	support
0.0	0.98	0.91	0.95	23573
1.0	0.05	0.22	0.08	472
avg/total	0.96	0.90	0.93	24045

3)

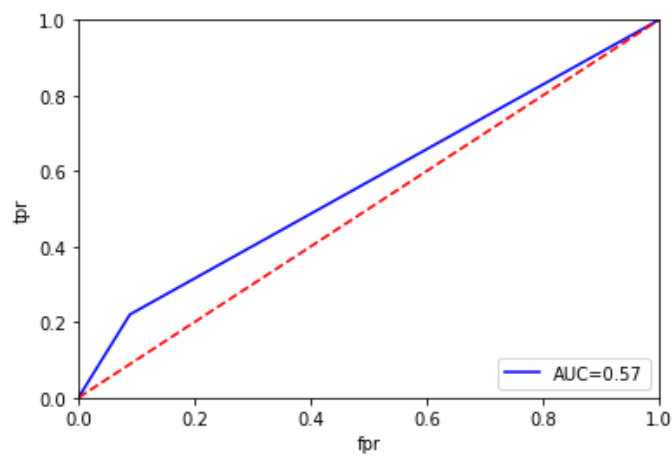
	Precision	Recall	f1-score	support
0.0	0.98	0.99	0.99	23573
1.0	0.02	0.01	0.01	472
avg/total	0.96	0.97	0.97	24045

### 3 ROC PLOTS FOR THREE EXPERIMENTS

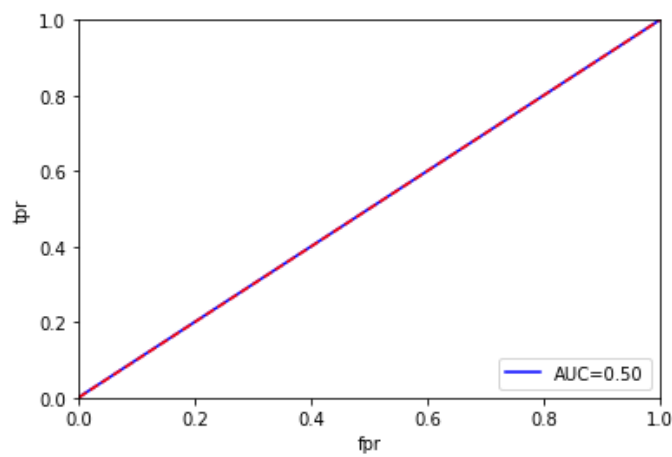
1)



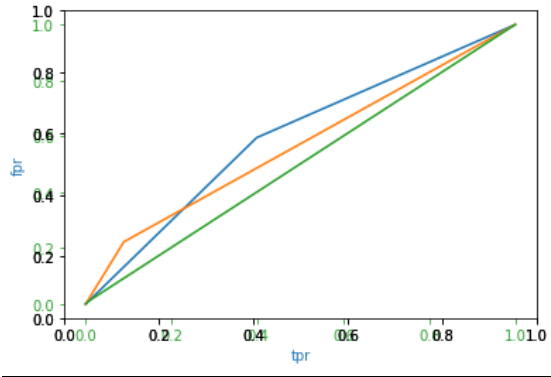
2)



3)



### A single ROC plot containing the 3 ROC curves for the NB, BGD-LR and SGD-LR



I did this last graph manually in different program and that program has also being attached to the zip file please do find it if it is necessary. And also I have used different alpha values in program 2 and 3 to get more accuracy that is the accuracy score in program 2 would be around 89% and program 3 is of 97% hence we find the last graph a straight line when compared two graphs.