

Table 1: Scores for our model and contribution of each component

Models	LL score	Recall	Precision	F1 score
Random decisions	0.51	0.5	0.004	0.008
DT	0.0	nan	0.0	0.000
DT with DD	14.60	0.31	0.17	0.219
DT with SMOTE	11.19	0.35	0.12	0.179
DT with DD, PS	4.99	0.35	0.05	0.087
DT with DD and NS	14.05	0.27	0.19	0.223
DT with DD, NS, PS	15.42	0.31	0.18	0.227
NN	0.0	nan	0.0	0.000
NN with DD	3.26	0.72	0.016	0.031
NN with DD, NS	2.47	0.48	0.02	0.038
NN with DD, NS, PS	3.70	0.79	0.02	0.039