

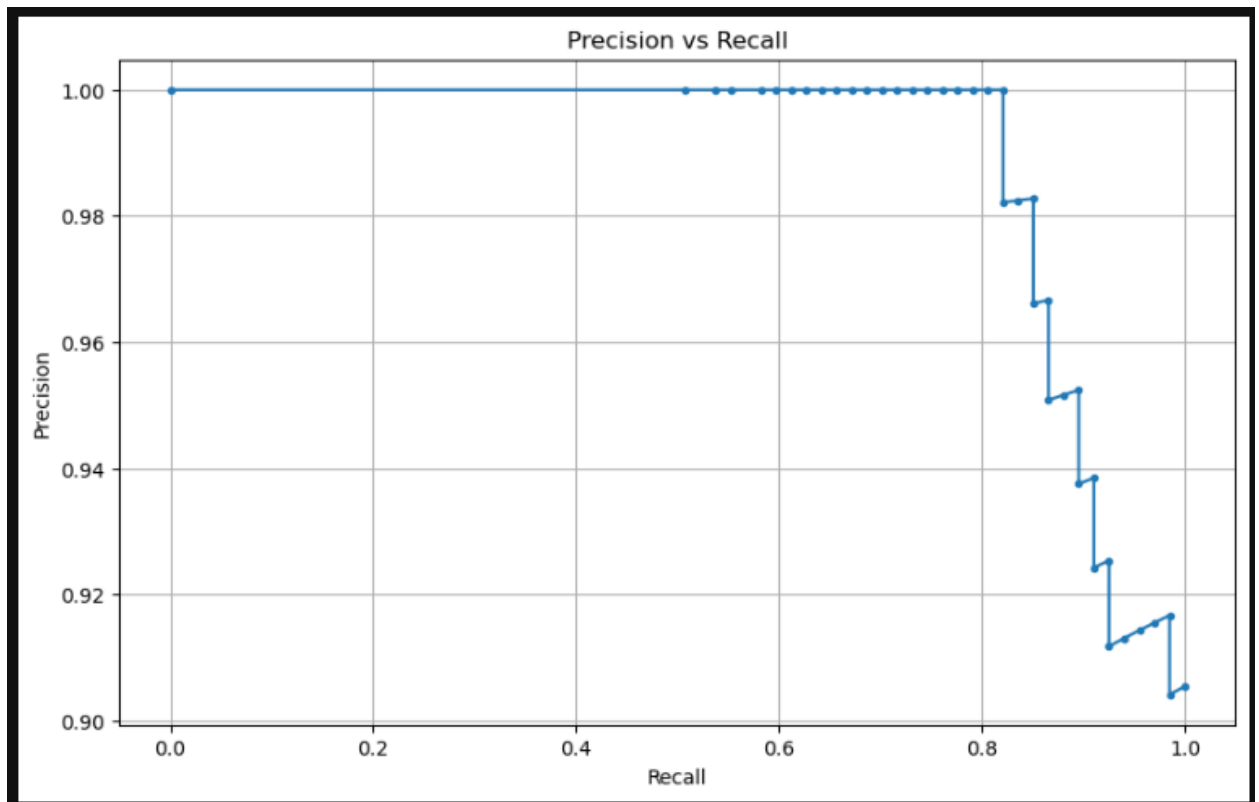
<https://github.com/Edward-Cloud9/HW3.git>

1. The results for accuracy, precision and recall:

	precision	recall	f1-score	support
0	0.875	0.894	0.884	47
1	0.924	0.910	0.917	67
accuracy			0.904	114
macro avg	0.900	0.902	0.901	114
weighted avg	0.904	0.904	0.904	114

The accuracy of the results comes out to be about 0.9035 or 90.4%, Precision at 0.9242 or 92.4%, and Recall at 0.9104 or 91%.

The plot for Precision Vs Recall



2. The results for n vary between 1 through 7.

	precision	recall	f1-score	support
0	0.902	0.979	0.939	47
1	0.984	0.925	0.954	67
accuracy			0.947	114
macro avg	0.943	0.952	0.946	114
weighted avg	0.950	0.947	0.948	114

Accuracy: 0.9473684210526315
Precision: 0.9841269841269841
Recall: 0.9253731343283582

at n=7 and 6

Accuracy: 0.9385964912280702
Precision: 0.96875
Recall: 0.9253731343283582

at n=5 and 4

Accuracy: 0.9385964912280702
Precision: 0.9411764705882353
Recall: 0.9552238805970149

at n=3

Accuracy: 0.9473684210526315
Precision: 0.9420289855072463
Recall: 0.9701492537313433

at n=2

Accuracy: 0.9122807017543859
Precision: 0.9014084507042254
Recall: 0.9552238805970149

at n=1

The accurate classifier here would be between 2 and 7 for n.

3. a) The accuracy, precision and recall results for n=7

	precision	recall	f1-score	support
0	0.935	0.915	0.925	47
1	0.941	0.955	0.948	67
accuracy			0.939	114
macro avg	0.938	0.935	0.936	114
weighted avg	0.939	0.939	0.938	114

The results for n= 1:8

Accuracy: 0.9210526315789473
Precision: 0.9264705882352942
Recall: 0.9402985074626866

at n=8

Accuracy: 0.9385964912280702 Precision: 0.9411764705882353 Recall: 0.9552238805970149	at n=7
Accuracy: 0.9298245614035088 Precision: 0.927536231884058 Recall: 0.9552238805970149	at n=6
Accuracy: 0.9385964912280702 Precision: 0.9285714285714286 Recall: 0.9701492537313433	at n=5
Accuracy: 0.9473684210526315 Precision: 0.9295774647887324 Recall: 0.9850746268656716	at n=4
Accuracy: 0.8947368421052632 Precision: 0.8767123287671232 Recall: 0.9552238805970149	at n=3
Accuracy: 0.9122807017543859 Precision: 0.88 Recall: 0.9850746268656716	at n=2
Accuracy: 0.9298245614035088 Precision: 0.9041095890410958 Recall: 0.9850746268656716	at n=1

Best option for accuracy would be $n = 4$

The changes from the previous is that n is more accurate with 4 trainings where as the logistic model is best at 2 or 7 trainings.