

**Assignment 2 Report**

# **Logistic Regression and Adaboost**

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## How to Run:

Install numpy, pandas and scikit learn if not already  
Then run the python file.

## TelcoCustomerChurn

### Performance measure of Logistic Regression

EPOCHS = 1000

Metric	Train	Test
Accuracy	0.7902	0.8077
Sensitivity	0.5729	0.6139
Specificity	0.8688	0.8774
Precision	0.6121	0.6433
False discovery rate	0.3879	0.3567
F1	0.5919	0.6283

### Accuracy of Adaboost implementation

Number of boosting rounds	Training	Test
5	0.7359	0.7452
10	0.7346	0.7459
15	0.7338	0.7438
20	0.7354	0.7466

# Adult

## Performance measure of Logistic Regression

EPOCHS = 1000

Metric	Train	Test
Accuracy	0.8393	0.8428
Precision	0.5895	0.6129
Recall	0.9186	0.9157
Specificity	0.6967	0.6974
False discovery rate	0.3033	0.3026
F1	0.6386	0.6524

## Accuracy of Adaboost implementation

Number of boosting rounds	Training	Test
5	0.8072	0.8055
10	0.806	0.8045
15	0.8056	0.8049
20	0.8057	0.8045

# CreditCardFraud

## Performance measure of Logistic Regression

EPOCHS = 1000

Metric	Train	Test
Accuracy	0.9983	0.9983
Sensitivity	0.0254	0.0102
Specificity	1.0	1.0
Precision	0.7692	0.5
False discovery rate	0.2308	0.5
F1	0.0491	0.02

## Accuracy of Adaboost implementation

Number of boosting rounds	Training	Test
5	0.9985	0.9986
10	0.998	0.9977
15	0.998	0.9978
20	0.998	0.998