# Telco Dataset

# Decision Tree:

|  |  |  |
| --- | --- | --- |
| Performance Measure | Training | Test |
| Accuracy | 94.63968761093362 % | 73.88218594748048 % |
| True Positive Rate (sensitivity, recall, hit rate) | 0.9388440860215054 | 0.5669291338582677 |
| True Negative Rate  (Specificity) | 0.9491075735648818 | 0.8025291828793775 |
| Positive predictive value(precision) | 0.8687810945273632 | 0.5155131264916468 |
| False discovery rate | 0.13121890547263682 | 0.48448687350835323 |
| F1 Score | 0.9024547803617571 | 0.54 |

# Adaboost version:

|  |  |  |
| --- | --- | --- |
| Number of boosting rounds | Training | Test |
| 5 | 79.09123180688676 % | 79.4180269694819 % |
| 10 | 79.58821441249556 % | 79.13413768630234 % |
| 15 | 80.12069577564785 % | 79.70191625266146 % |
| 20 | 80.15619453319134 % | 80.1277501774308 % |

# Adult Dataset

# Decision Tree:

|  |  |  |
| --- | --- | --- |
| Performance Measure | Training | Test |
| Accuracy | 90.13850925954363 % | 82.50721700141269 % |
| True Positive Rate (sensitivity, recall, hit rate) | 0.7736258130340518 | 0.609464378575143 |
| True Negative Rate  (Specificity) | 0.9419093851132686 | 0.8917571371129875 |
| Positive predictive value(precision) | 0.8085843774993335 | 0.635230352303523 |
| False discovery rate | 0.1914156225006665 | 0.36476964769647696 |
| F1 Score | 0.7907188946099198 | 0.6220806794055201 |

# Adaboost version:

|  |  |  |
| --- | --- | --- |
| Number of boosting rounds | Training | Test |
| 5 | 81.94772887810571 % | 82.20625268718138 % |
| 10 | 83.91941279444735 % | 84.08574411891161 % |
| 15 | 84.14667854181382 % | 84.22701308273448 % |
| 20 | 84.33709038420196 % | 84.34985565997175 % |

# Credit Card Dataset (Sampled)

# Decision Tree:

|  |  |  |
| --- | --- | --- |
| Performance Measure | Training | Test |
| Accuracy | 99.67059110595986 % | 99.46328372773847 % |
| True Positive Rate (sensitivity, recall, hit rate) | 0.8740554156171285 | 0.8105263157894737 |
| True Negative Rate  (Specificity) | 0.9997499374843711 | 0.999000999000999 |
| Positive predictive value(precision) | 0.9886039886039886 | 0.9506172839506173 |
| False discovery rate | 0.011396011396011397 | 0.04938271604938271 |
| F1 Score | 0.9278074866310162 | 0.875 |

# Adaboost version:

|  |  |  |
| --- | --- | --- |
| Number of boosting rounds | Training | Test |
| 5 | 99.30458122369304 % | 99.46328372773847 % |
| 10 | 99.30458122369304 % | 99.46328372773847 % |
| 15 | 99.31068138839748 % | 99.46328372773847 % |
| 20 | 99.38998352955529 % | 99.53647231031959 % |

# Credit Card Dataset (Full)

# Decision Tree:

|  |  |  |
| --- | --- | --- |
| Performance Measure | Training | Test |
| Accuracy | 99.96839956988304 % | 99.92099996488887 % |
| True Positive Rate (sensitivity, recall, hit rate) | 0.8513189448441247 | 0.7066666666666667 |
| True Negative Rate  (Specificity) | 0.9999560300402764 | 0.9995956897006346 |
| Positive predictive value(precision) | 0.9726027397260274 | 0.6973684210526315 |
| False discovery rate | 0.0273972602739726 | 0.3026315789473684 |
| F1 Score | 0.9079283887468031 | 0.7019867549668874 |

# Adaboost version:

|  |  |  |
| --- | --- | --- |
| Number of boosting rounds | Training | Test |
| 5 | 99.85472580043451 % | 99.87711105649381 % |
| 10 | 99.85472580043451 % | 99.87711105649381 % |
| 15 | 99.87140380521846 % | 99.89993328885924 % |
| 20 | 99.87886501788497 % | 99.89993328885924 % |