Binary Classification Model Results

[1] Report (K-Neighbors Classifier):
CV Scores:

[86.17 85.47 87.67 86.82 87.67]

Train score:

92.37 %

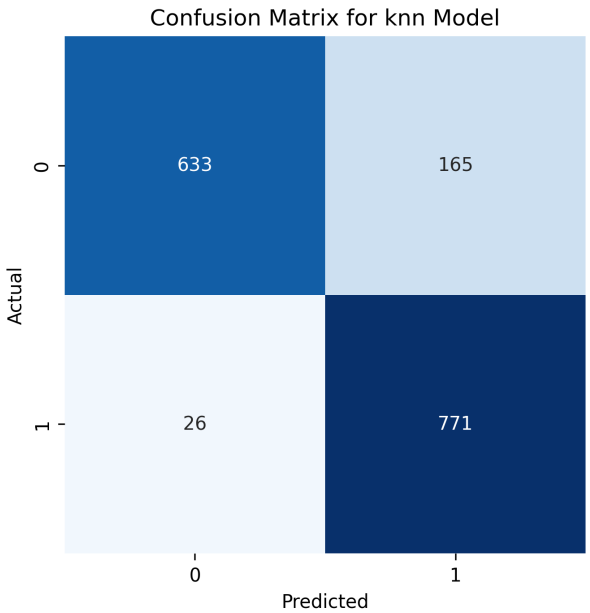
Test score:

88.03 %

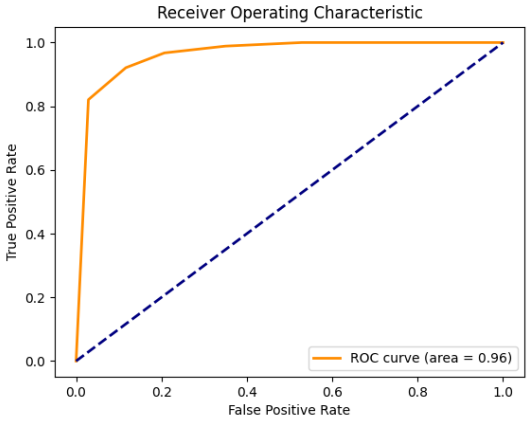
Classification result:

	precision	recall	f1-score	support
0	0.96	0.79	0.87	798
1	0.82	0.97	0.89	797
accuracy			0.88	1595
macro avg	0.89	0.88	0.88	1595
weighted avg	0.89	0.88	0.88	1595

Confusion Matrix:



ROC Curve:


Receiver Operating Characteristic
True Positive Rate
False Positive Rate
0.0
0.2
0.4
0.6
0.8
1.0
ROC curve (area = 0.96)

[2] Report (Logistic Regression):
CV Scores:

[74.7 74.32 76.01 75.17 76.35]

Train score:

75.72 %

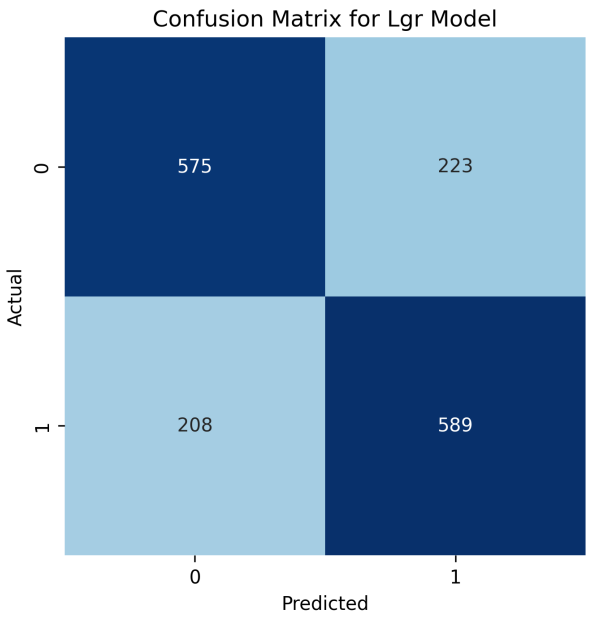
Test score:

72.98 %

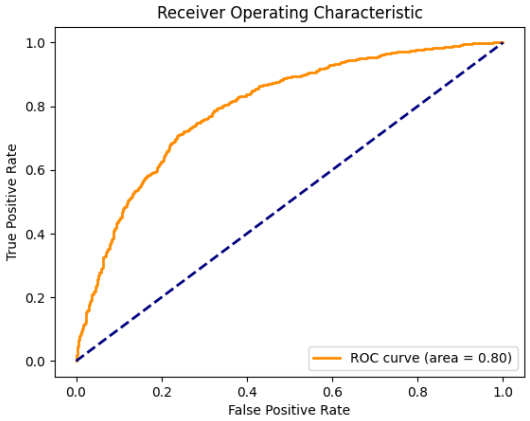
Classification result:

	precision	recall	f1-score	support
0	0.73	0.72	0.73	798
1	0.73	0.74	0.73	797
accuracy			0.73	1595
macro avg	0.73	0.73	0.73	1595
weighted avg	0.73	0.73	0.73	1595

Confusion Matrix:



ROC Curve:


Receiver Operating Characteristic
True Positive Rate
False Positive Rate
0.0
0.2
0.4
0.6
0.8
1.0
ROC curve (area = 0.80)

[3] Report (XGB Classifier):
CV Scores:

[0 0 0 0 0]

Train score:

100.00 %

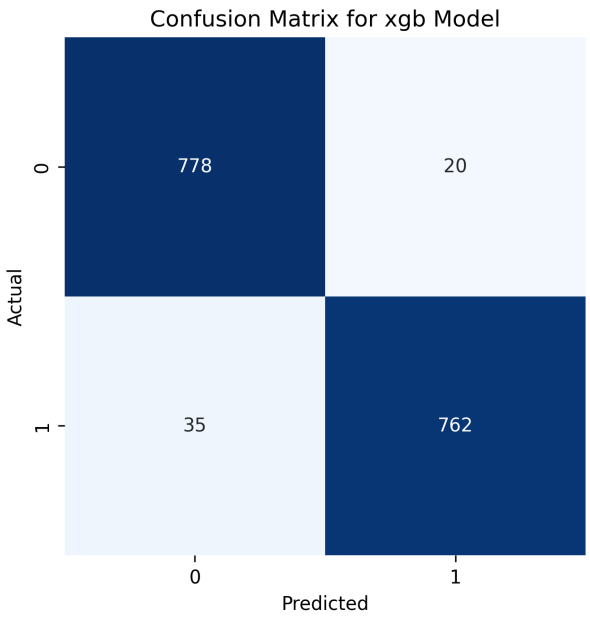
Test score:

96.55 %

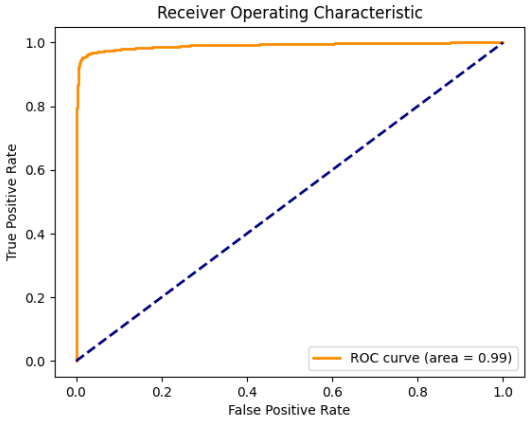
Classification result:

	precision	recall	f1-score	support
0	0.96	0.97	0.97	798
1	0.97	0.96	0.97	797
accuracy			0.97	1595
macro avg	0.97	0.97	0.97	1595
weighted avg	0.97	0.97	0.97	1595

Confusion Matrix:



ROC Curve:


Receiver Operating Characteristic
True Positive Rate
False Positive Rate
0.0
0.2
0.4
0.6
0.8
1.0
ROC curve (area = 0.99)

[4] Report (Decision Tree Classifier):
CV Scores:

[84.65 88.68 89.86 89.36 88.01]

Train score:

100.00 %

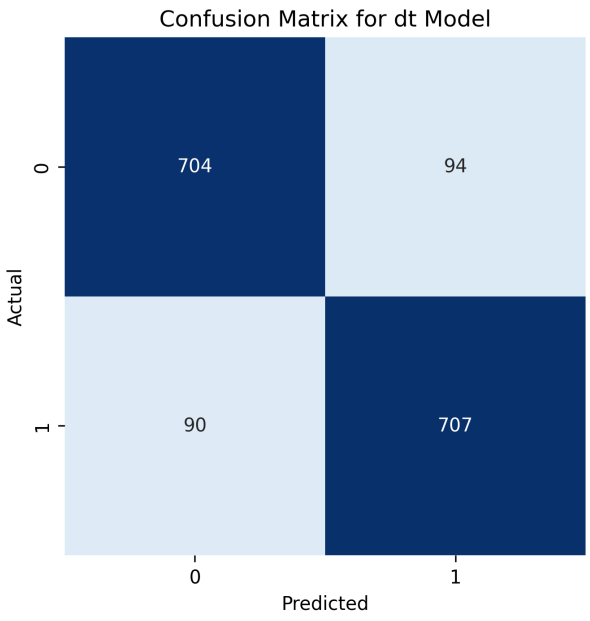
Test score:

88.46 %

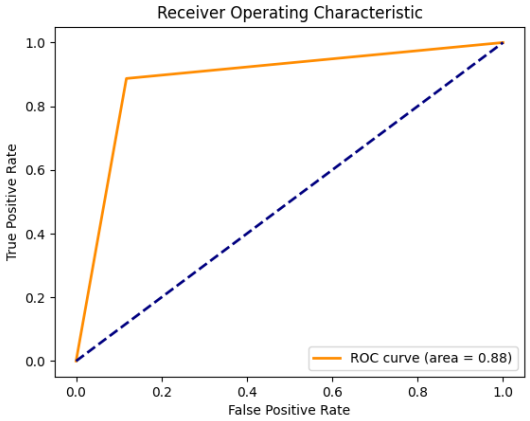
Classification result:

	precision	recall	f1-score	support
0	0.89	0.88	0.88	798
1	0.88	0.89	0.88	797
accuracy			0.88	1595
macro avg	0.88	0.88	0.88	1595
weighted avg	0.88	0.88	0.88	1595

Confusion Matrix:



ROC Curve:


Receiver Operating Characteristic
True Positive Rate
False Positive Rate
0.0
0.2
0.4
0.6
0.8
1.0
ROC curve (area = 0.88)

[5] Report (Random Forest Classifier):
CV Scores:

[91.91 93.75 93.58 92.91 94.76]

Train score:

100.00 %

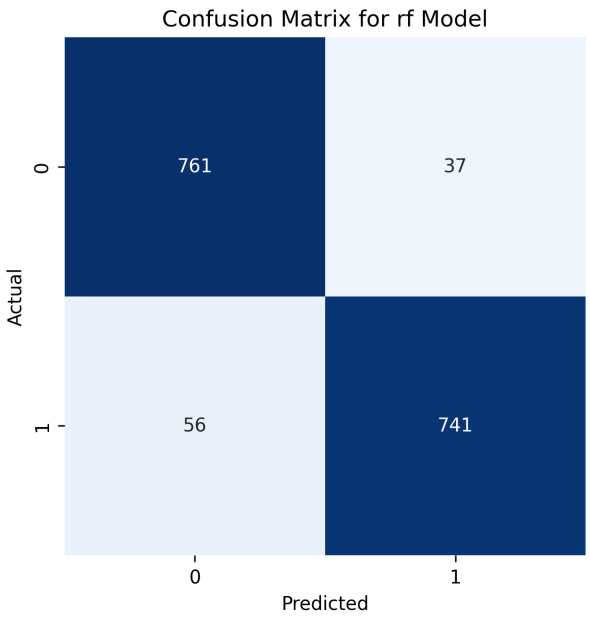
Test score:

94.17 %

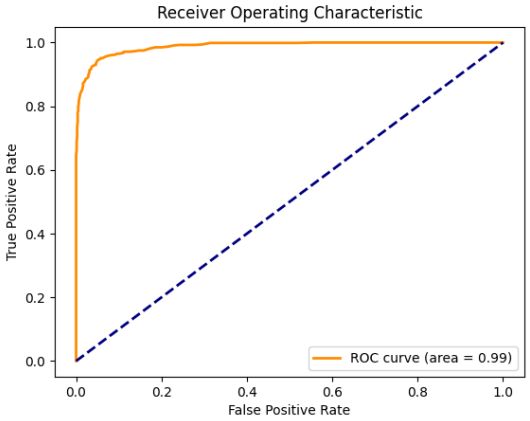
Classification result:

	precision	recall	f1-score	support
0	0.93	0.95	0.94	798
1	0.95	0.93	0.94	797
accuracy			0.94	1595
macro avg	0.94	0.94	0.94	1595
weighted avg	0.94	0.94	0.94	1595

Confusion Matrix:



ROC Curve:


Receiver Operating Characteristic
True Positive Rate
False Positive Rate
0.0
0.2
0.4
0.6
0.8
1.0
ROC curve (area = 0.99)

[6] Report (Bagging Classifier):
CV Scores:

[90.56 92.23 92.4 93.41 93.07]

Train score:

99.53 %

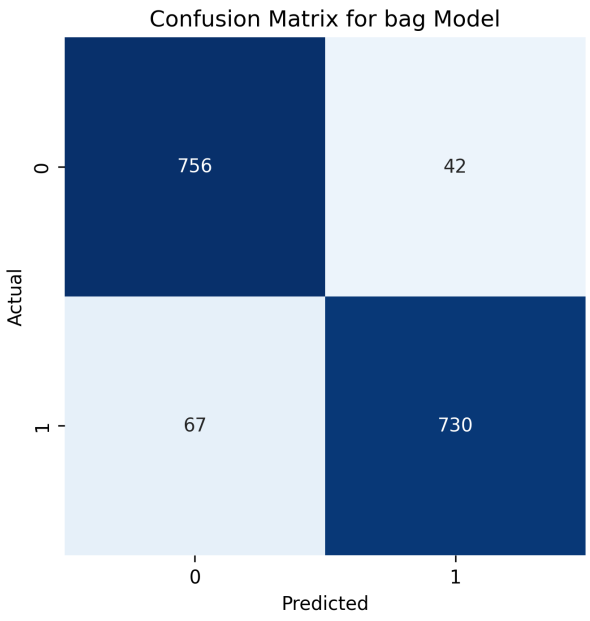
Test score:

93.17 %

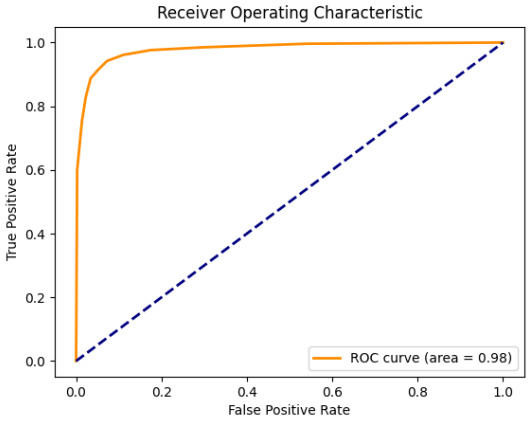
Classification result:

	precision	recall	f1-score	support
0	0.92	0.95	0.93	798
1	0.95	0.92	0.93	797
accuracy			0.93	1595
macro avg	0.93	0.93	0.93	1595
weighted avg	0.93	0.93	0.93	1595

Confusion Matrix:



ROC Curve:


Receiver Operating Characteristic
True Positive Rate
False Positive Rate
0.0
0.2
0.4
0.6
0.8
1.0
ROC curve (area = 0.98)

[7] Report (Gradient Boosting Classifier):
CV Scores:

[92.41 93.24 92.91 95.44 94.59]

Train score:

95.98 %

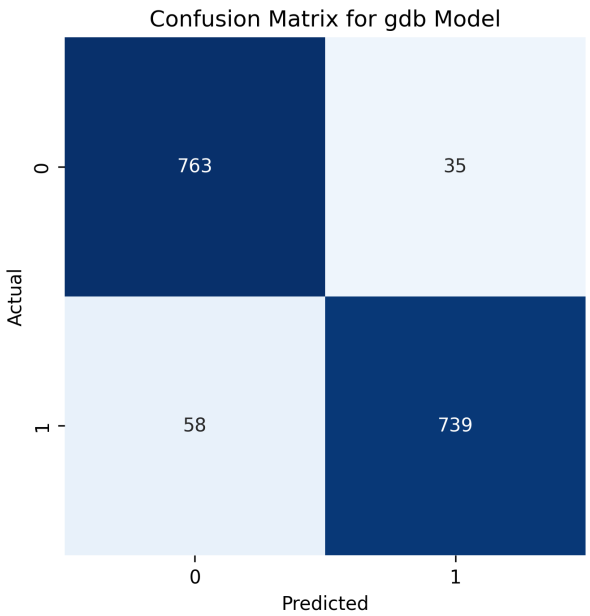
Test score:

94.17 %

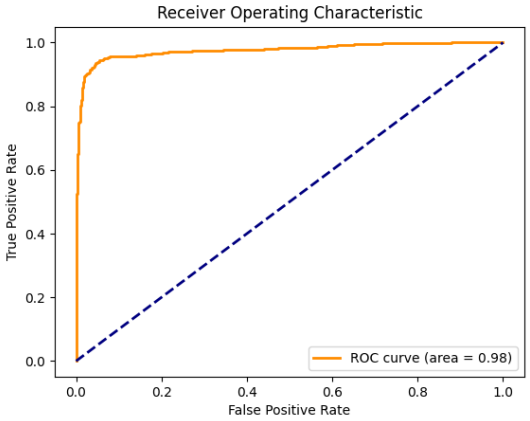
Classification result:

	precision	recall	f1-score	support
0	0.93	0.96	0.94	798
1	0.95	0.93	0.94	797
accuracy			0.94	1595
macro avg	0.94	0.94	0.94	1595
weighted avg	0.94	0.94	0.94	1595

Confusion Matrix:



ROC Curve:


Receiver Operating Characteristic
True Positive Rate
False Positive Rate
0.0
0.2
0.4
0.6
0.8
1.0
ROC curve (area = 0.98)