Decision tree_

attempt number 1

parameters:

criterion='gini', max_depth=5, min_samples_split=10, min_samples_leaf=5, random_state=42

Results:

Accuracy: 0.956140350877193

Precision: 0.9583333333333334

Recall: 0.971830985915493

F1 Score: 0.965034965034965

Confusion Matrix:

[[40 3]

[2 69]]

attempt number 2:

parameters

criterion='entropy', max_depth=3, min_samples_split=10, min_samples_leaf=2, random_state=42

Results:

Accuracy: 0.9649122807017544

Precision: 0.9466666666666667

Recall: 1.0

F1 Score: 0.9726027397260274

Confusion Matrix:

[[39 4]

[0 71]]

attempt number 3:

Parameters:

(criterion='entropy', max_depth=10, min_samples_split=2, min_samples_leaf=1, random_state=42)

Results:

Accuracy: 0.9473684210526315

Precision: 0.9333333333333333

Recall: 0.9859154929577465

F1 Score: 0.958904109589041

Confusion Matrix:

[[38 5]

[1 70]]

Attempt number 4:
Parameters:
criterion='gini', max_depth=11, min_samples_split=3, min_samples_leaf=2, random_state=42

Results:
Accuracy: 0.9298245614035088

Precision: 0.9436619718309859

Recall: 0.9436619718309859

F1 Score: 0.9436619718309859

Confusion Matrix:

[[39 4]

[4 67]]

Attempt number 5:
Parameters:
criterion='gini', max_depth=5, min_samples_split=5, min_samples_leaf=1, random_state=42

Results:
Accuracy: 0.9473684210526315

Precision: 0.9577464788732394

Recall: 0.9577464788732394

F1 Score: 0.9577464788732394

Confusion Matrix:

[[40 3]

[3 68]]

Random forest

attempt number 1:

parameters:

n_estimators=100, criterion='gini', max_depth=10, min_samples_split=5, min_samples_leaf=3, random_state=42, n_jobs=-1

Result:

Accuracy: 0.9649122807017544

Precision: 0.958904109589041

Recall: 0.9859154929577465

F1 Score: 0.9722222222222222

Confusion Matrix:

[[40 3]

[1 70]]

Attempt Number 2:

Parameters:

(n_estimators=50, criterion='entropy', max_depth=5, min_samples_split=2, min_samples_leaf=3,random_state=42,n_jobs=-1)

Results:

Accuracy: 0.9649122807017544

Precision: 0.958904109589041

Recall: 0.9859154929577465

F1 Score: 0.9722222222222222

Confusion Matrix:

[[40 3]

[1 70]]

Attempt Number 3:

n_estimators=100, criterion='entropy', max_depth=10, min_samples_split=3, min_samples_leaf=2, random_state=42, n_jobs=-1

Results:

Accuracy: 0.9649122807017544

Precision: 0.958904109589041

Recall: 0.9859154929577465

F1 Score: 0.9722222222222222

Confusion Matrix:

[[40 3]

[1 70]]

Attempt Number 4:

Parameters:

n_estimators=125, criterion='gini', max_depth=34, min_samples_split=3, min_samples_leaf=2, random_state=42, n_jobs=-1

Results:

Accuracy: 0.9649122807017544

Precision: 0.958904109589041

Recall: 0.9859154929577465

F1 Score: 0.9722222222222222

Confusion Matrix:

[[40 3]

[1 70]]

Attempt Number 5:

Parameters:

n_estimators=100, criterion='entropy', max_depth=4, min_samples_split=2, min_samples_leaf=1, random_state=42,n_jobs=-1

Results:

Accuracy: 0.9649122807017544

Precision: 0.958904109589041

Recall: 0.9859154929577465

F1 Score: 0.9722222222222222

Confusion Matrix:

[[40 3]

[1 70]]

Adaboost

Attempt Number 1:

parameters:

n_estimators=50, learning_rate=1.0, algorithm='SAMME.R',

,random_state=42

Results:

Accuracy: 0.9736842105263158

Precision: 0.9722222222222222

Recall: 0.9859154929577465

F1 Score: 0.9790209790209791

Confusion Matrix:

[[41 2]

[1 70]]

Attempt Number 2:

Parameters:

n_estimators=100, learning_rate=0.1,algorithm='SAMME',random_state=42

Results:

Accuracy: 0.956140350877193

Precision: 0.9583333333333334

Recall: 0.971830985915493

F1 Score: 0.965034965034965

Confusion Matrix:

[[40 3]

[2 69]]

Attempt Number 3:Parameters:

n_estimators=500, learning_rate=0.1, algorithm='SAMME.R',random_state=42

Results:

Accuracy: 0.9736842105263158

Precision: 0.9722222222222222

Recall: 0.9859154929577465

F1 Score: 0.9790209790209791

Confusion Matrix:

[[41 2]

[1 70]]

Attempt Number 4:Parameters:
n_estimators=50,learning_rate=0.2,algorithm='SAMME',random_state=42

Results:
Accuracy: 0.956140350877193

Precision: 0.9583333333333334

Recall: 0.971830985915493

F1 Score: 0.965034965034965

Confusion Matrix:

[[40 3]

[2 69]]

Attempt Number 5:
Parameters:
n_estimators=100, learning_rate=2.0, algorithm='SAMME.R', random_state=42
Results:
Accuracy: 0.8070175438596491

Precision: 0.9152542372881356

Recall: 0.7605633802816901

F1 Score: 0.8307692307692308

Confusion Matrix:

[[38 5]

[17 54]]