Running xgBoost for the file fall1Mod

C:\Users\ayrisbud\AppData\Roaming\Python\Python39\site-packages\xgboost\sklearn.py:1224: UserWarning: The use of label encoder in XGBClassifier is deprecated and will be removed in a future release. To remove this warning, do the following: 1) Pass option use\_label\_encoder=False when constructing XGBClassifier object; and 2) Encode your labels (y) as integers starting with 0, i.e. 0, 1, 2, ..., [num\_class - 1].

warnings.warn(label\_encoder\_deprecation\_msg, UserWarning)

C:\Users\ayrisbud\AppData\Roaming\Python\Python39\site-packages\xgboost\data.py:262: FutureWarning: pandas.Int64Index is deprecated and will be removed from pandas in a future version. Use pandas.Index with the appropriate dtype instead.

elif isinstance(data.columns, (pd.Int64Index, pd.RangeIndex)):

[18:15:53] WARNING: C:/Users/Administrator/workspace/xgboost-win64\_release\_1.5.1/src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval\_metric if you'd like to restore the old behavior.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

For file fall1Mod the best model is {XGBClassifier(base\_score=0.5, booster='gbtree', colsample\_bylevel=1,

colsample\_bynode=1, colsample\_bytree=1, enable\_categorical=False,

gamma=0, gpu\_id=-1, importance\_type=None,

interaction\_constraints='', learning\_rate=0.300000012,

max\_delta\_step=0, max\_depth=6, min\_child\_weight=1, missing=nan,

monotone\_constraints='()', n\_estimators=100, n\_jobs=48,

num\_parallel\_tree=1, predictor='auto', random\_state=0,

reg\_alpha=0, reg\_lambda=1, scale\_pos\_weight=1, subsample=1,

tree\_method='exact', validate\_parameters=1, verbosity=None): [0.7075297225891677, 0.9971278682399826, 0.9279279279279279, 0.571733561058924], RandomForestClassifier(class\_weight='balanced', n\_jobs=16, random\_state=42): [0.637263339070568, 0.9956256421432796, 0.6422376409366869, 0.6323654995730145]}

Before tomek links

False 1164587

True 47270

Name: target, dtype: int64

After tomek links

False 1160713

True 47270

Name: target, dtype: int64

Running randomForest for the file spring1Mod

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Running xgBoost for the file spring1Mod

C:\Users\ayrisbud\AppData\Roaming\Python\Python39\site-packages\xgboost\sklearn.py:1224: UserWarning: The use of label encoder in XGBClassifier is deprecated and will be removed in a future release. To remove this warning, do the following: 1) Pass option use\_label\_encoder=False when constructing XGBClassifier object; and 2) Encode your labels (y) as integers starting with 0, i.e. 0, 1, 2, ..., [num\_class - 1].

warnings.warn(label\_encoder\_deprecation\_msg, UserWarning)

C:\Users\ayrisbud\AppData\Roaming\Python\Python39\site-packages\xgboost\data.py:262: FutureWarning: pandas.Int64Index is deprecated and will be removed from pandas in a future version. Use pandas.Index with the appropriate dtype instead.

elif isinstance(data.columns, (pd.Int64Index, pd.RangeIndex)):

[18:17:14] WARNING: C:/Users/Administrator/workspace/xgboost-win64\_release\_1.5.1/src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval\_metric if you'd like to restore the old behavior.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

For file spring1Mod the best model is {XGBClassifier(base\_score=0.5, booster='gbtree', colsample\_bylevel=1,

colsample\_bynode=1, colsample\_bytree=1, enable\_categorical=False,

gamma=0, gpu\_id=-1, importance\_type=None,

interaction\_constraints='', learning\_rate=0.300000012,

max\_delta\_step=0, max\_depth=6, min\_child\_weight=1, missing=nan,

monotone\_constraints='()', n\_estimators=100, n\_jobs=48,

num\_parallel\_tree=1, predictor='auto', random\_state=0,

reg\_alpha=0, reg\_lambda=1, scale\_pos\_weight=1, subsample=1,

tree\_method='exact', validate\_parameters=1, verbosity=None): [0.92351246647462, 0.9940697155003774, 0.9292353823088456, 0.9178596110178695], RandomForestClassifier(class\_weight='balanced', n\_jobs=16, random\_state=42): [0.9217788800544655, 0.9938059333651669, 0.9082850160525181, 0.935679731464113]}

Before tomek links

False 1309909

True 16118

Name: target, dtype: int64

After tomek links

False 1305804

True 16118

Name: target, dtype: int64

Running randomForest for the file summer1Mod

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Running xgBoost for the file summer1Mod

C:\Users\ayrisbud\AppData\Roaming\Python\Python39\site-packages\xgboost\sklearn.py:1224: UserWarning: The use of label encoder in XGBClassifier is deprecated and will be removed in a future release. To remove this warning, do the following: 1) Pass option use\_label\_encoder=False when constructing XGBClassifier object; and 2) Encode your labels (y) as integers starting with 0, i.e. 0, 1, 2, ..., [num\_class - 1].

warnings.warn(label\_encoder\_deprecation\_msg, UserWarning)

C:\Users\ayrisbud\AppData\Roaming\Python\Python39\site-packages\xgboost\data.py:262: FutureWarning: pandas.Int64Index is deprecated and will be removed from pandas in a future version. Use pandas.Index with the appropriate dtype instead.

elif isinstance(data.columns, (pd.Int64Index, pd.RangeIndex)):

[18:18:45] WARNING: C:/Users/Administrator/workspace/xgboost-win64\_release\_1.5.1/src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval\_metric if you'd like to restore the old behavior.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

For file summer1Mod the best model is {XGBClassifier(base\_score=0.5, booster='gbtree', colsample\_bylevel=1,

colsample\_bynode=1, colsample\_bytree=1, enable\_categorical=False,

gamma=0, gpu\_id=-1, importance\_type=None,

interaction\_constraints='', learning\_rate=0.300000012,

max\_delta\_step=0, max\_depth=6, min\_child\_weight=1, missing=nan,

monotone\_constraints='()', n\_estimators=100, n\_jobs=48,

num\_parallel\_tree=1, predictor='auto', random\_state=0,

reg\_alpha=0, reg\_lambda=1, scale\_pos\_weight=1, subsample=1,

tree\_method='exact', validate\_parameters=1, verbosity=None): [0.5280089778359675, 0.9911190959672567, 0.7458388375165126, 0.4086566299942096], RandomForestClassifier(class\_weight='balanced', n\_jobs=16, random\_state=42): [0.5052821128451381, 0.9854970455641231, 0.43160377358490565, 0.6092935726693689]}

Before tomek links

False 1035541

True 94205

Name: target, dtype: int64

After tomek links

False 1030003

True 94205

Name: target, dtype: int64

Running randomForest for the file winter1Mod

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Running xgBoost for the file winter1Mod

C:\Users\ayrisbud\AppData\Roaming\Python\Python39\site-packages\xgboost\sklearn.py:1224: UserWarning: The use of label encoder in XGBClassifier is deprecated and will be removed in a future release. To remove this warning, do the following: 1) Pass option use\_label\_encoder=False when constructing XGBClassifier object; and 2) Encode your labels (y) as integers starting with 0, i.e. 0, 1, 2, ..., [num\_class - 1].

warnings.warn(label\_encoder\_deprecation\_msg, UserWarning)

C:\Users\ayrisbud\AppData\Roaming\Python\Python39\site-packages\xgboost\data.py:262: FutureWarning: pandas.Int64Index is deprecated and will be removed from pandas in a future version. Use pandas.Index with the appropriate dtype instead.

elif isinstance(data.columns, (pd.Int64Index, pd.RangeIndex)):

[18:20:03] WARNING: C:/Users/Administrator/workspace/xgboost-win64\_release\_1.5.1/src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval\_metric if you'd like to restore the old behavior.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

For file winter1Mod the best model is {XGBClassifier(base\_score=0.5, booster='gbtree', colsample\_bylevel=1,

colsample\_bynode=1, colsample\_bytree=1, enable\_categorical=False,

gamma=0, gpu\_id=-1, importance\_type=None,

interaction\_constraints='', learning\_rate=0.300000012,

max\_delta\_step=0, max\_depth=6, min\_child\_weight=1, missing=nan,

monotone\_constraints='()', n\_estimators=100, n\_jobs=48,

num\_parallel\_tree=1, predictor='auto', random\_state=0,

reg\_alpha=0, reg\_lambda=1, scale\_pos\_weight=1, subsample=1,

tree\_method='exact', validate\_parameters=1, verbosity=None): [0.9307134950186172, 0.9886239949439978, 0.9455818827799504, 0.9163054516632403], RandomForestClassifier(class\_weight='balanced', n\_jobs=16, random\_state=42): [0.8977365307640537, 0.9821119136183668, 0.8577617328519855, 0.9416193991033611]}

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