

SSA-PNN

```
SSAPNN(dim = 5, bound = 10, max_iteration = 3, pop_size = 10,  
        r_a = 1, p_c = 0.7, p_m = 0.1)
```

Extreme Gradient Boosting

```
XGBClassifier(base_score=0.5, booster='gbtree', colsample_bylevel=1,  
              colsample_bynode=1, colsample_bytree=0.5, gamma=0, gpu_id=-1,  
              importance_type='gain', interaction_constraints="",  
              learning_rate=0.2, max_delta_step=0, max_depth=5,  
              min_child_weight=4, monotone_constraints=()),  
              n_estimators=120, n_jobs=-1, num_parallel_tree=1,  
              objective='multi:softprob', random_state=8233, reg_alpha=1,  
              reg_lambda=0.001, scale_pos_weight=27.400000000000006,  
              subsample=0.5, tree_method='auto', use_label_encoder=True,  
              validate_parameters=1, verbosity=0)
```

K Neighbors Classifier

```
KNeighborsClassifier(algorithm='auto', leaf_size=30, metric='manhattan',  
                    metric_params=None, n_jobs=-1, n_neighbors=5, p=2,  
                    weights='uniform')
```

Gradient Boosting Classifier

```
GradientBoostingClassifier(ccp_alpha=0.0, criterion='friedman_mse', init=None,  
                           learning_rate=0.05, loss='deviance', max_depth=6,  
                           max_features='log2', max_leaf_nodes=None,  
                           min_impurity_decrease=0.0005,  
                           min_impurity_split=None, min_samples_leaf=4,  
                           min_samples_split=2, min_weight_fraction_leaf=0.0,  
                           n_estimators=60, n_iter_no_change=None,  
                           presort='deprecated', random_state=8233,  
                           subsample=0.25, tol=0.0001, validation_fraction=0.1,  
                           verbose=0, warm_start=False)
```

Random Forest Classifier

```
RandomForestClassifier(bootstrap=False, ccp_alpha=0.0, class_weight='balanced',  
                       criterion='entropy', max_depth=5, max_features='log2',  
                       max_leaf_nodes=None, max_samples=None,  
                       min_impurity_decrease=0.01, min_impurity_split=None,  
                       min_samples_leaf=4, min_samples_split=7,  
                       min_weight_fraction_leaf=0.0, n_estimators=190,  
                       n_jobs=-1, oob_score=False, random_state=8233, verbose=0,  
                       warm_start=False)
```

Ada Boost Classifier

```
AdaBoostClassifier(algorithm='SAMME.R', base_estimator=None,  
                   n_estimators=120, learning_rate=1e-07, random_state=8233)
```

```
# Ridge Classifier
```

```
RidgeClassifier(alpha=1.55, class_weight=None, copy_X=True,  
                fit_intercept=False, max_iter=None, normalize=True,  
                random_state=8233, solver='auto', tol=0.001)
```

```
# SVM - Linear Kernel
```

```
SGDClassifier(alpha=0.002, average=False, class_weight=None,  
              early_stopping=False, epsilon=0.1, eta0=0.2, fit_intercept=False,  
              l1_ratio=0.1000000001, learning_rate='adaptive', loss='hinge',  
              max_iter=1000, n_iter_no_change=5, n_jobs=-1, penalty='l2',  
              power_t=0.5, random_state=8233, shuffle=True, tol=0.001,  
              validation_fraction=0.1, verbose=0, warm_start=False)
```

```
# Logistic Regression
```

```
LogisticRegression(C=8.024, class_weight='balanced', dual=False,  
                   fit_intercept=True, intercept_scaling=1, l1_ratio=None,  
                   max_iter=1000, multi_class='auto', n_jobs=None, penalty='l2',  
                   random_state=8233, solver='lbfgs', tol=0.0001, verbose=0,  
                   warm_start=False)
```

```
# Linear Discriminant Analysis
```

```
LinearDiscriminantAnalysis(n_components=None, priors=None, shrinkage=0.8,  
                            solver='lsqr', store_covariance=False, tol=0.0001)
```