**K Nearest Neighbors**

﻿

**Parameters: {'n\_neighbors': 3, 'p': 1}**

**Score: 0.6**

Parameters: {'n\_neighbors': 1, 'p': 1}Score: 0.5958333333333333

Parameters: {'n\_neighbors': 4, 'p': 1}

Score: 0.5930555555555556

* Train:
  + Mean model ACC: 60%

Graphical user interface

Description automatically generated with medium confidence

* Test:
  + Mean model ACC: 66.11%

Graphical user interface

Description automatically generated

**Support Vector Machine:**

**﻿**

**Parameters: {'C': 1000, 'gamma': 0.01, 'kernel': 'rbf'}**

**Score: 0.7166666666666666**

Parameters: {'C': 100, 'gamma': 0.01, 'kernel': 'rbf'}Score: 0.7097222222222224

Parameters: {'C': 100, 'gamma': 0.1, 'kernel': 'rbf'}

Score: 0.7069444444444445

* Train:
  + Mean model ACC: 71.67%

Graphical user interface, application

Description automatically generated

* Test:
  + Mean model ACC: 76.67

A picture containing graphical user interface

Description automatically generated

**Random Forest:**

**Parameters: {'criterion': 'entropy', 'max\_depth': 10, 'max\_features': 'sqrt', 'min\_samples\_leaf': 4, 'min\_samples\_split': 8, 'n\_estimators': 200}**

**Score: 0.6597222222222222**

Parameters: {'criterion': 'log\_loss', 'max\_depth': 10, 'max\_features': 'log2', 'min\_samples\_leaf': 3, 'min\_samples\_split': 8, 'n\_estimators': 100} Score: 0.6583333333333333

Parameters: {'criterion': 'gini', 'max\_depth': 9, 'max\_features': 'sqrt', 'min\_samples\_leaf': 3, 'min\_samples\_split': 10, 'n\_estimators': 100}

Score: 0.6555555555555556

* Train:
  + Mean model ACC: 64.44%

Graphical user interface, application

Description automatically generated

* Test:
  + ﻿Mean model ACC: 74.44%

A picture containing graphical user interface

Description automatically generated

**Decision Trees:**

﻿

**Parameters: {'criterion': 'entropy', 'max\_depth': 10, 'max\_features': 'log2', 'min\_samples\_leaf': 5, 'min\_samples\_split': 10}**

**Score: 0.611111111111111**

Parameters: {'criterion': 'entropy', 'max\_depth': 10, 'max\_features': 'log2', 'min\_samples\_leaf': 3, 'min\_samples\_split': 8}

Score: 0.6083333333333334

Parameters: {'criterion': 'gini', 'max\_depth': 9, 'max\_features': 'log2', 'min\_samples\_leaf': 5, 'min\_samples\_split': 10}

Score: 0.6069444444444445

* Train:
  + Mean model ACC: 57.78%

Graphical user interface

Description automatically generated with medium confidence

* Test:
  + Mean model ACC: 60.55

A picture containing graphical user interface

Description automatically generated

**MultiLayer Perceptron:**

﻿

**Parameters: {'activation': 'tanh', 'alpha': 0.1, 'hidden\_layer\_sizes': (50, 30), 'max\_iter': 10000, 'solver': 'lbfgs'}**

**Score: 0.7902777777777779**

Parameters: {'activation': 'tanh', 'alpha': 0.1, 'hidden\_layer\_sizes': (100, 30), 'max\_iter': 10000, 'solver': 'lbfgs'}

Score: 0.7833333333333334

Parameters: {'activation': 'tanh', 'alpha': 0.1, 'hidden\_layer\_sizes': (50, 20), 'max\_iter': 10000, 'solver': 'lbfgs'}

Score: 0.7791666666666666

* Train:
  + Mean model ACC: 77.5%

Graphical user interface, application

Description automatically generated

* Test:
  + Mean model ACC: 85%

Graphical user interface

Description automatically generated

**Gaussian Naïve Bayes:**

﻿ **Parameters: {'var\_smoothing': 1.0}**

**Score: 0.43888888888888883**

Parameters: {'var\_smoothing': 0.1}Score: 0.43472222222222223

Parameters: {'var\_smoothing': 0.001}

Score: 0.43364444444444443

* Test:
  + Mean model ACC: 43.89%

Graphical user interface

Description automatically generated

* Train:
  + Mean model ACC: 49.44%

Graphical user interface

Description automatically generated with medium confidence