

Activity 14

For K=1

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Classifier

Choose **IKK-K:1-W:0-A "weka.core.neighboursearch.LinearNNSearch-A "weka.core.EuclideanDistance-R first-last"**

Test options

☐ Use training set
☐ Supplied test set
☒ Cross-validation Folds **10**
☐ Percentage split % **65**
More options...

(Nom) class

Start Stop

Result list (right-click for options)

18.39.08 - lazy IBK
18.41.48 - lazy IBK
18.43.00 - lazy IBK

Classifier output

```
=== Run information ===
Scheme:   weka.classifiers.lazy.IBK -K 1 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A \"weka.core.EuclideanDistance -R first-last\"""
Relation:  iris
Instances: 150
Attributes: 5
  sepalength
  sepalwidth
  petallength
  petalwidth
  class
Test mode: 10-fold cross-validation

=== Classifier model (full training set) ===
IBK Instance-based classifier
using 1 nearest neighbour(s) for classification

Time taken to build model: 0 seconds

=== Stratified cross-validation ===
=== Summary ===
Correctly Classified Instances      143          95.3333 %
Incorrectly Classified Instances       7          4.6667 %
Kappa statistic                    0.93
Mean absolute error                 0.0399
Root mean squared error             0.1767
Relative absolute error              8.9763 %
Root relative squared error         37.0695 %
Total Number of Instances          150

=== Detailed Accuracy By Class ===
               TP Rate  FP Rate  Precision  Recall   F-Measure  MCC      ROC Area  PRC Area  Class
               1.000    0.000    1.000     1.000    1.000     1.000    1.000    1.000    Iris-setosa
               0.940    0.040    0.922     0.940    0.931     0.896    0.952    0.887    Iris-versicolour
               0.920    0.030    0.939     0.920    0.929     0.895    0.947    0.894    Iris-virginica
Weighted Avg.   0.953    0.023    0.953     0.953    0.953     0.930    0.966    0.927

=== Confusion Matrix ===
  a b c <-- classified as
 50 0 0 | a = Iris-setosa
  0 47 3 | b = Iris-versicolour
  0 4 46 | c = Iris-virginica
```

For K=3

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Classifier

Choose **IKK-K:3-W:0-A "weka.core.neighboursearch.LinearNNSearch-A "weka.core.EuclideanDistance-R first-last"**

Test options

☐ Use training set
☐ Supplied test set
☒ Cross-validation Folds **10**
☐ Percentage split % **65**
More options...

(Nom) class

Start Stop

Result list (right-click for options)

18.39.08 - lazy IBK
18.41.48 - lazy IBK
18.43.00 - lazy IBK
18.45.25 - lazy IBK

Classifier output

```
=== Run information ===
Scheme:   weka.classifiers.lazy.IBK -K 3 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A \"weka.core.EuclideanDistance -R first-last\"""
Relation:  iris
Instances: 150
Attributes: 5
  sepalength
  sepalwidth
  petallength
  petalwidth
  class
Test mode: 10-fold cross-validation

=== Classifier model (full training set) ===
IBK Instance-based classifier
using 3 nearest neighbour(s) for classification

Time taken to build model: 0 seconds

=== Stratified cross-validation ===
=== Summary ===
Correctly Classified Instances      143          95.3333 %
Incorrectly Classified Instances       7          4.6667 %
Kappa statistic                    0.93
Mean absolute error                 0.04
Root mean squared error             0.1703
Relative absolute error              9.0013 %
Root relative squared error         36.1152 %
Total Number of Instances          150

=== Detailed Accuracy By Class ===
               TP Rate  FP Rate  Precision  Recall   F-Measure  MCC      ROC Area  PRC Area  Class
               1.000    0.000    1.000     1.000    1.000     1.000    1.000    1.000    Iris-setosa
               0.940    0.040    0.922     0.940    0.931     0.896    0.963    0.910    Iris-versicolour
               0.920    0.030    0.939     0.920    0.929     0.895    0.958    0.919    Iris-virginica
Weighted Avg.   0.953    0.023    0.953     0.953    0.953     0.930    0.974    0.942

=== Confusion Matrix ===
  a b c <-- classified as
 50 0 0 | a = Iris-setosa
  0 47 3 | b = Iris-versicolour
  0 4 46 | c = Iris-virginica
```

For K=5

Weka Explorer

PreprocessClassifyClusterAssociateSelected attributesVisualize

Classifier

Choose `weka.classifiers.lazy.Ibk -K 5 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A "weka.core.EuclideanDistance -R first-last"`

Test options

Use training set

Supplied test set

Cross-validation

Folds10

Percentage split

More options...

(Nom) class

StartStop

Result list (right-click for options)

18:39:08 - Ibk Ibk

18:41:48 - Ibk Ibk

18:43:00 - Ibk Ibk

18:45:25 - Ibk Ibk

18:47:02 - Ibk Ibk

Classifier output

Scheme: `weka.classifiers.lazy.Ibk -K 5 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A "weka.core.EuclideanDistance -R first-last"`

Relation: iris

Instances: 150

Attributes: 5

sepalength

sepalwidth

petallength

petalwidth

class

Test mode: 10-fold cross-validation

=== Classifier model (full training set) ===

IBk instance-based classifier

using 5 nearest neighbour(s) for classification

Time taken to build model: 0 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances14395.3333 %

Incorrectly Classified Instances74.6667 %

Page statistic0.93

Mean absolute error0.1441

Root mean squared error0.1444

Relative absolute error9.235 %

Root relative squared error30.6375 %

Total Number of Instances150

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	1.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	Iris-setosa
	0.940	0.040	0.922	0.940	0.931	0.996	0.993	0.993	Iris-versicolour
	0.920	0.030	0.939	0.920	0.929	0.995	0.993	0.993	Iris-virginica
Weighted Avg.	0.963	0.023	0.953	0.953	0.953	0.990	0.995	0.999	

=== Confusion Matrix ===

a b c

<-- classified as

50 0 0 | a = Iris-setosa

0 47 3 | b = Iris-versicolour

0 4 46 | c = Iris-virginica