

การทำ Cross Validation ด้วย Model KNN (Weka)

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Classifier

Choose **IBk -K 10 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A "weka.core.EuclideanDistance -R first-last"**

Test options

☐ Use training set
☐ Supplied test set Set...
☒ Cross-validation Folds **10**
☐ Percentage split % 66
 More options...

(Nom) satisfaction

Start Stop

Result list (right-click for options)

21:04:17 - lazy.IBk

Classifier output

```

Time taken to build model: 0.01 seconds

=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances      9030           90.3 %
Incorrectly Classified Instances    970           9.7 %
Kappa statistic                    0.801
Mean absolute error                 0.1338
Root mean squared error             0.2662
Relative absolute error             27.1056 %
Root relative squared error         53.5726 %
Total Number of Instances          10000

=== Detailed Accuracy By Class ===

          TP Rate  FP Rate  Precision  Recall   F-Measure  MCC      ROC Area  PRC Area  Cla
          0.964    0.173    0.875     0.964    0.917     0.806    0.962    0.956    neu
          0.827    0.036    0.948     0.827    0.883     0.806    0.962    0.954    sat
Weighted Avg.   0.903    0.112    0.907     0.903    0.902     0.806    0.962    0.955

=== Confusion Matrix ===

  a    b  <-- classified as
5359  203 |  a = neutral or dissatisfied
 767 3671 |  b = satisfied
  
```

Status

OK Log x 0

การตั้งค่า parameter ของ Model KNN (Weka)

weka.gui.GenericObjectEditor

weka.classifiers.lazy.IBk

About

K-nearest neighbours classifier.

More

Capabilities

KNN 10

batchSize 100

crossValidate False

debug False

distanceWeighting No distance weighting

doNotCheckCapabilities False

meanSquared False

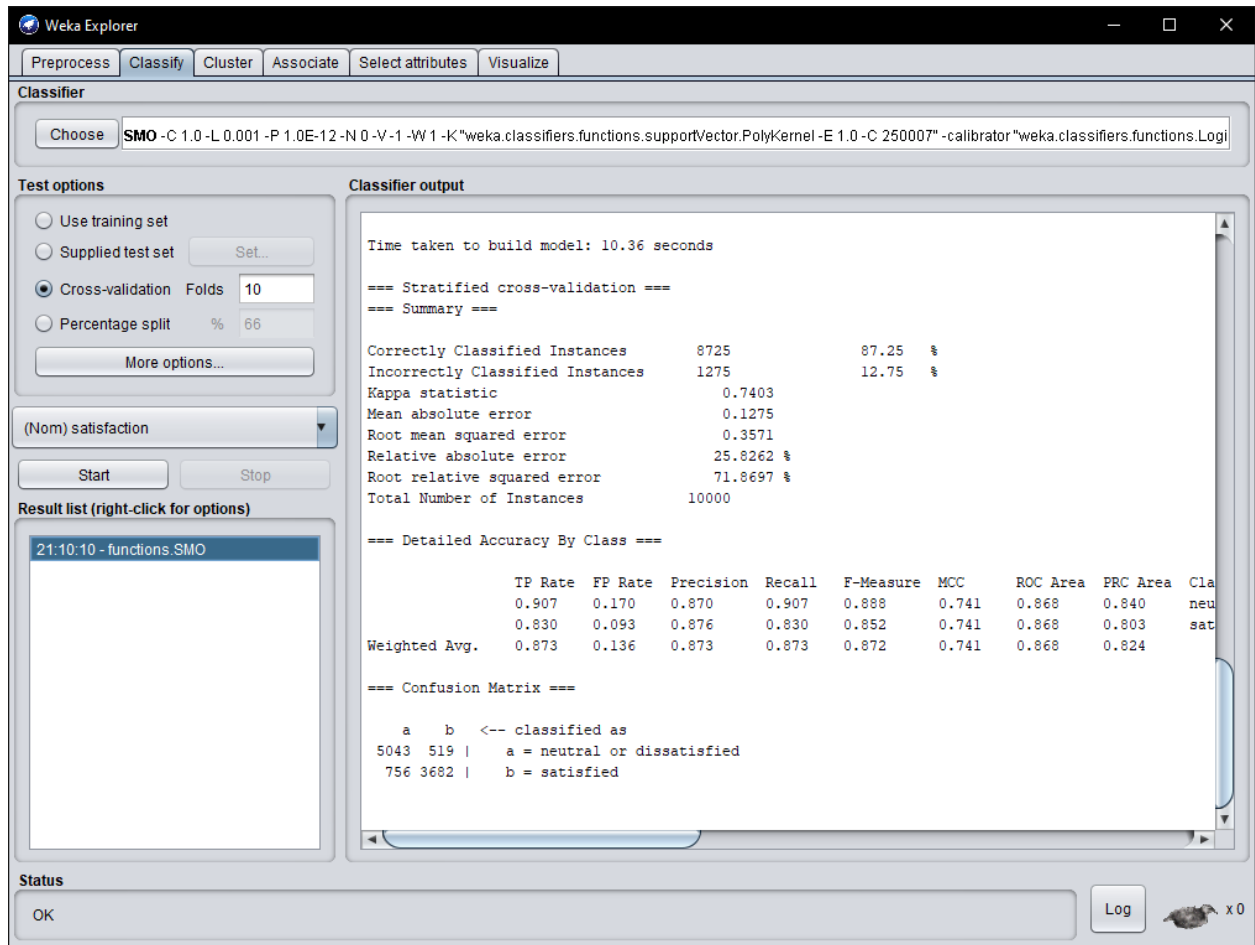
nearestNeighbourSearchAlgorithm Choose LinearNNSearch -A "weka.core.Euclid

numDecimalPlaces 2

windowSize 0

Open... Save... OK Cancel

การทำ Cross Validation ด้วย Model SVM (Weka)



The screenshot shows the Weka Explorer interface with the 'Classify' tab selected. The classifier chosen is 'SMO' (Support Vector Machine) with the following parameters: `-C 1.0 -L 0.001 -P 1.0E-12 -N 0 -V -1 -W 1 -K "weka.classifiers.functions.supportVector.PolyKernel -E 1.0 -C 250007" -calibrator "weka.classifiers.functions.Logit"`.

Test options:

- ☐ Use training set
- ☐ Supplied test set (Set...)
- ☒ Cross-validation (Folds: 10)
- ☐ Percentage split (%: 66)

Classifier output:

```
Time taken to build model: 10.36 seconds

=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances      8725           87.25 %
Incorrectly Classified Instances    1275           12.75 %
Kappa statistic                    0.7403
Mean absolute error                 0.1275
Root mean squared error             0.3571
Relative absolute error             25.8262 %
Root relative squared error         71.8697 %
Total Number of Instances          10000

=== Detailed Accuracy By Class ===
```

| | TP Rate | FP Rate | Precision | Recall | F-Measure | MCC | ROC Area | PRC Area | Class |
|---------------|---------|---------|-----------|--------|-----------|-------|----------|----------|-------|
| | 0.907 | 0.170 | 0.870 | 0.907 | 0.888 | 0.741 | 0.868 | 0.840 | neu |
| | 0.830 | 0.093 | 0.876 | 0.830 | 0.852 | 0.741 | 0.868 | 0.803 | sat |
| Weighted Avg. | 0.873 | 0.136 | 0.873 | 0.873 | 0.872 | 0.741 | 0.868 | 0.824 | |

```
=== Confusion Matrix ===

 a   b  <-- classified as
5043 519 | a = neutral or dissatisfied
756 3682 | b = satisfied
```

Result list (right-click for options):

- 21:10:10 - functions.SMO

Status: OK

การตั้งค่า parameter ของ Model SVM (Weka)

weka.gui.GenericObjectEditor

weka.classifiers.functions.SMO

About

Implements John Platt's sequential minimal optimization algorithm for training a support vector classifier.

More

Capabilities

batchSize 100

buildCalibrationModels False

c 1.0

calibrator Choose **Logistic** -R 1.0E-8 -M -1 -num-decimal-places 4

checksTurnedOff False

debug False

doNotCheckCapabilities False

epsilon 1.0E-12

filterType Normalize training data

kernel Choose **PolyKernel** -E 1.0 -C 250007

numDecimalPlaces 2

numFolds -1

randomSeed 1

toleranceParameter 0.001

Open... Save... OK Cancel

การทำ Cross Validation ด้วย Model Neural Network (Weka)

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Classifier

Choose **MultilayerPerceptron -L 0.01 -M 0.2 -N 200 -V 0 -S 0 -E 20 -H "15, 9"**

Test options

☐ Use training set
☐ Supplied test set Set...
☒ Cross-validation Folds **10**
☐ Percentage split % 66
More options...

(Nom) satisfaction ▼

Start Stop

Result list (right-click for options)

10:32:53 - functions.MultilayerPerceptron

Classifier output

Time taken to build model: 14.8 seconds

=== Stratified cross-validation ===
=== Summary ===

| | | |
|----------------------------------|-----------|---------|
| Correctly Classified Instances | 9394 | 93.94 % |
| Incorrectly Classified Instances | 606 | 6.06 % |
| Kappa statistic | 0.8773 | |
| Mean absolute error | 0.0779 | |
| Root mean squared error | 0.2128 | |
| Relative absolute error | 15.7791 % | |
| Root relative squared error | 42.8318 % | |
| Total Number of Instances | 10000 | |

=== Detailed Accuracy By Class ===

| | TP Rate | FP Rate | Precision | Recall | F-Measure | MCC | ROC Area | PRC Area | Class |
|---------------|---------|---------|-----------|--------|-----------|-------|----------|----------|-------|
| | 0.944 | 0.066 | 0.947 | 0.944 | 0.945 | 0.877 | 0.984 | 0.986 | neu |
| | 0.934 | 0.056 | 0.930 | 0.934 | 0.932 | 0.877 | 0.984 | 0.982 | sat |
| Weighted Avg. | 0.939 | 0.062 | 0.939 | 0.939 | 0.939 | 0.877 | 0.984 | 0.984 | |

=== Confusion Matrix ===

| | | |
|------|------|-----------------------------|
| a | b | <-- classified as |
| 5248 | 314 | a = neutral or dissatisfied |
| 292 | 4146 | b = satisfied |

Status

OK Log x 0

การตั้งค่า parameter ของ Model Neural Network (Weka)

weka.gui.GenericObjectEditor

weka.classifiers.functions.MultilayerPerceptron

About

A classifier that uses backpropagation to learn a multi-layer perceptron to classify instances.

More

Capabilities

GUI ☐

autoBuild ☒

batchSize 100

debug ☐

decay ☐

doNotCheckCapabilities ☐

hiddenLayers 15, 9

learningRate 0.01

momentum 0.2

nominalToBinaryFilter ☒

normalizeAttributes ☒

normalizeNumericClass ☒

numDecimalPlaces 2

reset ☒

resume ☐

seed 0

trainingTime 200

validationSetSize 0

validationThreshold 20

Open... Save... OK Cancel

การทำ Supplied test set ด้วย Model Neural Network (Weka)

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Classifier

Choose MultilayerPerceptron -L 0.01 -M 0.2 -N 200 -V 0 -S 0 -E 20 -H "15, 9"

Test options

☐ Use training set

☒ Supplied test set Set...

☐ Cross-validation Folds 10

☐ Percentage split % 66

More options...

(Nom) satisfaction

Start Stop

Result list (right-click for options)

10:56:33 - functions.MultilayerPerceptron

Classifier output

=== Evaluation on test set ===

Time taken to test model on supplied test set: 0.04 seconds

=== Summary ===

| | | |
|----------------------------------|-----------|---------|
| Correctly Classified Instances | 1889 | 94.45 % |
| Incorrectly Classified Instances | 111 | 5.55 % |
| Kappa statistic | 0.8877 | |
| Mean absolute error | 0.0769 | |
| Root mean squared error | 0.2061 | |
| Relative absolute error | 15.5491 % | |
| Root relative squared error | 41.3991 % | |
| Total Number of Instances | 2000 | |

=== Detailed Accuracy By Class ===

| | TP Rate | FP Rate | Precision | Recall | F-Measure | MCC | ROC Area | PRC Area | Class |
|---------------|---------|---------|-----------|--------|-----------|-------|----------|----------|-------|
| | 0.960 | 0.074 | 0.940 | 0.960 | 0.950 | 0.888 | 0.987 | 0.990 | neu |
| | 0.926 | 0.040 | 0.950 | 0.926 | 0.938 | 0.888 | 0.987 | 0.985 | sat |
| Weighted Avg. | 0.945 | 0.059 | 0.945 | 0.945 | 0.944 | 0.888 | 0.987 | 0.988 | |

=== Confusion Matrix ===

```
a    b    <-- classified as
1052  44 |    a = neutral or dissatisfied
  67  837 |    b = satisfied
```

Status

OK Log x 0