

Experiment - 6 Support Vector Machine for Binary Classification

Outputs

```
=== Stratified cross-validation ===
```

```
=== Summary ===
```

Correctly Classified Instances	74	74	%
Incorrectly Classified Instances	26	26	%
Kappa statistic	0.3948		
Mean absolute error	0.26		
Root mean squared error	0.5099		
Relative absolute error	57.722	%	
Root relative squared error	107.5058	%	
Total Number of Instances	100		

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

		TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC
Area	PRC Area	Class						
		0.848	0.471	0.778	0.848	0.812	0.399	
0.689	0.760	c0						
		0.529	0.152	0.643	0.529	0.581	0.399	
0.689	0.500	c1						
Weighted Avg.		0.740	0.362	0.732	0.740	0.733	0.399	
0.689	0.672							

```
=== Confusion Matrix ===
```

```
a  b  <-- classified as
56 10 | a = c0
16 18 | b = c1
```

Weka Explorer

Preprocess

Classify

Cluster

Associate

Select attributes

Visualize

Classifier

Choose SMO -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.Logistic -R 1.0E

Test options

Use training set

Supplied test set

Cross-validation

Percentage split

Folds

%

10

66

More options...

(Nom) class

Start

Stop

Result list (right-click for options)

00:59:16 - functions.SMO

Classifier output

Linear Kernel: $K(x,y) = \langle x,y \rangle$

Classifier for classes: c0, c1

BinarySMO

Machine linear: showing attribute weights, not support vectors.

-0.0394 * (normalized) a0=true

+ -0.0752 * (normalized) a1=true

+ 0.038 * (normalized) a2=true

+ 0.0772 * (normalized) a3=true

+ -0.0775 * (normalized) a4=true

+ 2.037 * (normalized) a5=true

+ -0.0013 * (normalized) a6=true

+ 0.0408 * (normalized) a7=true

+ -1.8844 * (normalized) a8=true

+ 0.0382 * (normalized) a9=true

- 1.0758

Number of kernel evaluations: 2538 (84.816% cached)

Time taken to build model: 0 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances

74

74

%

Incorrectly Classified Instances

26

26

%

Kappa statistic

0.3948

Mean absolute error

0.26

Status

OK

Log

x0