

Assignment 12

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Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Classifier

Choose LibSVM -S 0 -K 2 -D 3 -G 0.0 -R 0.0 -N 0.5 -M 40.0 -C 1.0 -E 0.001 -P 0.1 -model "C:\\Program Files\\Weka-3-8-6" -seed 1

Test options

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

(Nom) Class

Start Stop

Result list (right-click for options)

10:16:05 - functions.LibSVM

Classifier output

```
=== Classifier model (full training set) ===  
LibSVM wrapper, original code by Yasser EL-Manzalawy (= WLSVM)  
Time taken to build model: 0.06 seconds  
  
=== Stratified cross-validation ===  
=== Summary ===  
Correctly Classified Instances      529           92.9701 %  
Incorrectly Classified Instances    40            7.0299 %  
Kappa statistic                    0.8443  
Mean absolute error                 0.0703  
Root mean squared error            0.2651  
Relative absolute error            15.0318 %  
Root relative squared error        54.837 %  
Total Number of Instances          569  
  
=== Detailed Accuracy By Class ===  


|               | TP Rate | FP Rate | Precision | Recall | F-Measure | MCC   | ROC Area | PRC Area | Class |
|---------------|---------|---------|-----------|--------|-----------|-------|----------|----------|-------|
|               | 0.821   | 0.006   | 0.989     | 0.821  | 0.897     | 0.853 | 0.908    | 0.878    | M     |
|               | 0.994   | 0.179   | 0.903     | 0.994  | 0.947     | 0.853 | 0.908    | 0.902    | B     |
| Weighted Avg. | 0.930   | 0.115   | 0.935     | 0.930  | 0.928     | 0.853 | 0.908    | 0.893    |       |

  
=== Confusion Matrix ===  


| a   | b   | <-- classified as |       |
|-----|-----|-------------------|-------|
| 174 | 38  |                   | a = M |
| 2   | 355 |                   | b = B |


```

Status

Weka Explorer

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Classifier

Choose MultilayerPerceptron -L 0.3 -M 0.2 -N 500 -V 0 -S 0 -E 20 -H a

Test options

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

(Nom) Class

Start Stop

Result list (right-click for options)

10:16:05 - functions.LibSVM
10:16:44 - functions.MultilayerPerceptron

Classifier output

```
Class B  
Input  
Node 1  
  
Time taken to build model: 0.26 seconds  
  
=== Stratified cross-validation ===  
=== Summary ===  
Correctly Classified Instances      545           95.7821 %  
Incorrectly Classified Instances    24            4.2179 %  
Kappa statistic                    0.9094  
Mean absolute error                 0.0498  
Root mean squared error            0.1761  
Relative absolute error            10.6522 %  
Root relative squared error        36.4161 %  
Total Number of Instances          569  
  
=== Detailed Accuracy By Class ===  


|               | TP Rate | FP Rate | Precision | Recall | F-Measure | MCC   | ROC Area | PRC Area | Class |
|---------------|---------|---------|-----------|--------|-----------|-------|----------|----------|-------|
|               | 0.934   | 0.028   | 0.952     | 0.934  | 0.943     | 0.910 | 0.986    | 0.985    | M     |
|               | 0.972   | 0.066   | 0.961     | 0.972  | 0.967     | 0.910 | 0.986    | 0.989    | B     |
| Weighted Avg. | 0.958   | 0.052   | 0.958     | 0.958  | 0.958     | 0.910 | 0.986    | 0.988    |       |

  
=== Confusion Matrix ===  


| a   | b   | <-- classified as |       |
|-----|-----|-------------------|-------|
| 198 | 14  |                   | a = M |
| 10  | 347 |                   | b = B |


```

The TPR for libSVM is lower than the TPR for MLP.