Elijah Andrushenko

CPTS 434

Introduction to Neural Networks and Applications

10-22-19

Homework 6

SimpleLogistic

=== Summary ===

Correctly Classified Instances   247   83.165 %

Incorrectly Classified Instances   50   16.835 %

Kappa statistic   0.6598

Mean absolute error   0.2674

Root mean squared error   0.3698

Relative absolute error   53.7993 %

Root relative squared error   74.185 %

Total Number of Instances   297

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	0.869	0.212	0.827	0.869	0.848	0.661	0.872	0.849	0
	0.788	0.131	0.837	0.788	0.812	0.661	0.872	0.872	1
Weighted Avg.	0.832	0.175	0.832	0.832	0.831	0.661	0.872	0.859	

=== Confusion Matrix ===

  a   b   <-- classified as

 139 21 | a = 0

 29 108 | b = 1

Logistic

=== Summary ===

Correctly Classified Instances	193	64.9832 %
Incorrectly Classified Instances	104	35.0168 %
Kappa statistic	0.2925	
Mean absolute error	0.3438	
Root mean squared error	0.5727	
Relative absolute error	69.165 %	
Root relative squared error	114.8823 %	
Total Number of Instances	297	

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	0.700	0.409	0.667	0.700	0.683	0.293	0.710	0.685	0
	0.591	0.300	0.628	0.591	0.609	0.293	0.709	0.691	1
Weighted Avg.	0.650	0.359	0.649	0.650	0.649	0.293	0.709	0.688	

=== Confusion Matrix ===

```
  a   b   <-- classified as
112  48 |   a = 0
 56  81 |   b = 1
```

Attribute Selection

=== Attribute Selection on all input data ===

Search Method:

    Best first.

Start set: no attributes

Search direction: forward

Stale search after 5 node expansions

Total number of subsets evaluated: 82

Merit of best subset found: 0.287

Attribute Subset Evaluator (supervised, Class (nominal): 14 heartdisease::category|0|1):

CFS Subset Evaluator

Including locally predictive attributes

Selected attributes: 3,9,11,12,13 : 5

cp

exang

slope

ca

thal

SimpleLogistic Reduced Set

=== Summary ===

Correctly Classified Instances	249	83.8384 %
Incorrectly Classified Instances	48	16.1616 %
Kappa statistic	0.6734	
Mean absolute error	0.2454	
Root mean squared error	0.3524	
Relative absolute error	49.3697 %	
Root relative squared error	70.6853 %	
Total Number of Instances	297	

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	0.875	0.204	0.833	0.875	0.854	0.674	0.894	0.878	0
	0.796	0.125	0.845	0.796	0.820	0.674	0.894	0.887	1
Weighted Avg.	0.838	0.168	0.839	0.838	0.838	0.674	0.894	0.882	

=== Confusion Matrix ===

```
   a   b   <-- classified as
 140  20 |   a = 0
  28 109 |   b = 1
```

Logistic Reduced Set

=== Summary ===

Correctly Classified Instances	249	83.8384 %
Incorrectly Classified Instances	48	16.1616 %
Kappa statistic	0.6734	
Mean absolute error	0.2255	
Root mean squared error	0.3399	
Relative absolute error	45.3747 %	
Root relative squared error	68.1886 %	
Total Number of Instances	297	

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area
Class								

0.875	0.204	0.833	0.875	0.854	0.674	0.904	0.879	0
0.796	0.125	0.845	0.796	0.820	0.674	0.904	0.901	1
Weighted Avg.	0.838	0.168	0.839	0.838	0.838	0.674	0.904	0.889

=== Confusion Matrix ===

```
  a   b   <-- classified as
140  20 |   a = 0
 28 109 |   b = 1
```