- Rede Neural 1

=== Run information ===

Scheme:weka.classifiers.functions.MultilayerPerceptron -L 0.3 -M 0.2 -N 500 -V 0 -S 12345 -E 20 -H a

Relation: Aula9_RedesNeurais-2

Instances: 91

Attributes: 7

CLASS_Y

LS

GA

Rep_EST

Rep_PC

EST_CUST

FORN_VEN

Test mode:10-fold cross-validation

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

Sigmoid Node 0

Inputs Weights

Threshold -6.051034847158921

Node 2 7.231875918969311

Node 3 3.3991329353317155

Node 4 4.947702519335574

Node 5 2.5805109990468535

Sigmoid Node 1

Inputs Weights

Threshold 6.051369586119442

Node 2 -7.2319432700052575

Node 3 -3.3993138220794803

Node 4 -4.946855344455453

Node 5 -2.5809076643611037

Sigmoid Node 2

Inputs Weights

Threshold 0.46227491349887145

Attrib LS -3.9109792001066492

Attrib GA -6.034103864734481

Attrib Rep_EST 11.646862662729601

Attrib Rep_PC 3.3166713815322164

Attrib EST_CUST 0.48372397773453946

Attrib FORN_VEN 1.3399333860973714

Sigmoid Node 3

Inputs Weights

Threshold 2.281760521017178

Attrib LS -3.2782185280119145

Attrib GA 4.836058574384419

Attrib Rep_EST 2.5164277863003415

Attrib Rep_PC -4.997717036702611

Attrib EST_CUST -1.3063927679987426

Attrib FORN_VEN -1.046677760591017

Sigmoid Node 4

Inputs Weights

Threshold -1.406877679743357

Attrib LS -3.3318108024699695

Attrib GA 7.006328212631873

Attrib Rep_EST -5.520361661048657

Attrib Rep_PC 2.617139415485489

Attrib EST_CUST 1.9768519013240589

Attrib FORN_VEN 2.058300384939363

Sigmoid Node 5

Inputs Weights

Threshold 0.04664594486008929

Attrib LS -2.73260116712376

Attrib GA 1.349773645399601

Attrib Rep_EST -3.3786696624841266

Attrib Rep_PC 3.548082809219273

Attrib EST_CUST 0.3605636586080972

Attrib FORN_VEN 0.43936199473515636

Class I

Input

Node 0

Class A

Input

Node 1

Time taken to build model: 0.22 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances	78	85.7143 %
Incorrectly Classified Instances	13	14.2857 %
Kappa statistic	0.715	
Mean absolute error	0.1625	
Root mean squared error	0.3193	
Relative absolute error	32.6796 %	
Root relative squared error	64.0089 %	
Total Number of Instances	91	

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	ROC Area	Class
	0.816	0.095	0.909	0.816	0.86	0.918	I
	0.905	0.184	0.809	0.905	0.854	0.918	A
Weighted Avg.	0.857	0.136	0.863	0.857	0.857	0.918	

=== Confusion Matrix ===

a	b	<-- classified as
40	9	a = I
4	38	b = A

- Rede Neural 2

=== Run information ===

Scheme:weka.classifiers.functions.MultilayerPerceptron -L 0.9 -M 0.2 -N 500 -V 0 -S 12345 -E 20 -H a

Relation: Aula9_RedesNeurais-2

Instances: 91

Attributes: 7

CLASS_Y

LS

GA

Rep_EST

Rep_PC

EST_CUST

FORN_VEN

Test mode:10-fold cross-validation

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

Sigmoid Node 0

Inputs Weights

Threshold -2.8374442358427743

Node 2 9.129498752323117

Node 3 1.6743531555904785

Node 4 0.840218962193647

Node 5 7.644058613957676

Sigmoid Node 1

Inputs Weights

Threshold 2.837442089019373

Node 2 -9.12941878696117

Node 3 -1.6743420968596612

Node 4 -0.8490278179713482

Node 5 -7.643776450979976

Sigmoid Node 2

Inputs Weights

Threshold 0.9083039314575134

Attrib LS -5.36699912477193

Attrib GA -11.462391077743144

Attrib Rep_EST 19.810747642924845

Attrib Rep_PC 5.350044572617745

Attrib EST_CUST 0.7077742445119104

Attrib FORN_VEN 2.629580366317645

Sigmoid Node 3

Inputs Weights

Threshold 1.9381249648794507

Attrib LS -4.310412454027452

Attrib GA 11.611403905948665

Attrib Rep_EST -2.3121636395038268

Attrib Rep_PC 0.6555443525329911

Attrib EST_CUST -1.514642407347438

Attrib FORN_VEN -1.3069400503703874

Sigmoid Node 4

Inputs Weights

Threshold -1.3768355408965778

Attrib LS -1.4368325692300836

Attrib GA 4.243843090704246

Attrib Rep_EST -0.27914178687966373

Attrib Rep_PC 2.4214014545647116

Attrib EST_CUST 1.7654084714296145

Attrib FORN_VEN 1.8265192004060684

Sigmoid Node 5

Inputs Weights

Threshold -3.1161397107798274

Attrib LS -4.931972067010444

Attrib GA 14.613717186213472

Attrib Rep_EST -12.46423983619535

Attrib Rep_PC 4.948227585154165

Attrib EST_CUST 3.3668014254531555

Attrib FORN_VEN 3.392390711374362

Class I

Input

Node 0

Class A

Input

Node 1

Time taken to build model: 0.14 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances	80	87.9121 %
Incorrectly Classified Instances	11	12.0879 %
Kappa statistic	0.7597	
Mean absolute error	0.168	
Root mean squared error	0.325	
Relative absolute error	33.7858 %	
Root relative squared error	65.1598 %	
Total Number of Instances	91	

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	ROC Area	Class
	0.816	0.048	0.952	0.816	0.879	0.874	I
	0.952	0.184	0.816	0.952	0.879	0.874	A
Weighted Avg.	0.879	0.11	0.89	0.879	0.879	0.874	

=== Confusion Matrix ===

a	b	<-- classified as
40	9	a = I
2	40	b = A

- Rede Neural 3

=== Run information ===

Scheme:weka.classifiers.functions.MultilayerPerceptron -L 0.2 -M 0.2 -N 5000 -V 0 -S 12345 -E 20 -H a

Relation: Aula9_RedesNeurais-2

Instances: 91

Attributes: 7

CLASS_Y

LS

GA

Rep_EST

Rep_PC

EST_CUST

FORN_VEN

Test mode:10-fold cross-validation

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

Sigmoid Node 0

Inputs Weights

Threshold -16.191501252448884

Node 2 9.76114870525198

Node 3 12.879421945654679

Node 4 8.424880171652969

Node 5 12.186648463340886

Sigmoid Node 1

Inputs Weights

Threshold 16.19150444183219

Node 2 -9.761151121851293

Node 3 -12.879424653073384

Node 4 -8.424876846369653

Node 5 -12.186650839583058

Sigmoid Node 2

Inputs Weights

Threshold -0.46773639627834424

Attrib LS -3.276922093142723

Attrib GA -6.3278349524568105

Attrib Rep_EST 12.421145975540242

Attrib Rep_PC 3.4596824402386255

Attrib EST_CUST 1.5392594536988058

Attrib FORN_VEN 2.4328410934309734

Sigmoid Node 3

Inputs Weights

Threshold 9.903702371245757

Attrib LS -3.7998372053682243

Attrib GA 12.274413943553922

Attrib Rep_EST 9.681048860351318

Attrib Rep_PC -0.056015167339107726

Attrib EST_CUST -3.0043273402890733

Attrib FORN_VEN -2.30363790702887

Sigmoid Node 4

Inputs Weights

Threshold -1.7486867995026683

Attrib LS -2.5577042822572165

Attrib GA 10.157206071457052

Attrib Rep_EST -4.803546639388251

Attrib Rep_PC 2.617339857074429

Attrib EST_CUST 2.3669423523220265

Attrib FORN_VEN 2.457250389761146

Sigmoid Node 5

Inputs Weights

Threshold 5.9841658551857515

Attrib LS 5.839315203123761

Attrib GA -10.571066860443665

Attrib Rep_EST -3.293067780469836

Attrib Rep_PC 29.03484913567614

Attrib EST_CUST -4.879372106255956

Attrib FORN_VEN -4.713811299457585

Class I

Input

Node 0

Class A

Input

Node 1

Time taken to build model: 1.39 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances	81	89.011 %
Incorrectly Classified Instances	10	10.989 %
Kappa statistic	0.7804	
Mean absolute error	0.1168	
Root mean squared error	0.2912	
Relative absolute error	23.4877 %	
Root relative squared error	58.3776 %	
Total Number of Instances	91	

=== Detailed Accuracy By Class ===

TP Rate	FP Rate	Precision	Recall	F-Measure	ROC Area	Class
0.857	0.071	0.933	0.857	0.894	0.939	I
0.929	0.143	0.848	0.929	0.886	0.939	A

Weighted Avg. 0.89 0.104 0.894 0.89 0.89 0.939

=== Confusion Matrix ===

a b <-- classified as

42 7 | a = I

3 39 | b = A

Análise:

O modelo 3 apresenta melhor resultado, pois tem o maior acerto (89,01%) e o menor erro relativo médio (23,49%)