

## Weather Numeric

Weka Explorer

Preprocess | Classify | Cluster | Associate | Select attributes | Visualize

Open file... | Open URL... | Open DB... | Generate... | Undo | Edit... | Save...

Filter: Choose **None** [Apply] [Stop]

**Current relation**  
Relation: weather  
Instances: 14  
Attributes: 5  
Sum of weights: 14

**Attributes**  
[All] [None] [Invert] [Pattern]

No.	Name
1	<input checked="" type="checkbox"/> outlook
2	<input type="checkbox"/> temperature
3	<input type="checkbox"/> humidity
4	<input type="checkbox"/> windy
5	<input type="checkbox"/> play

[Remove]

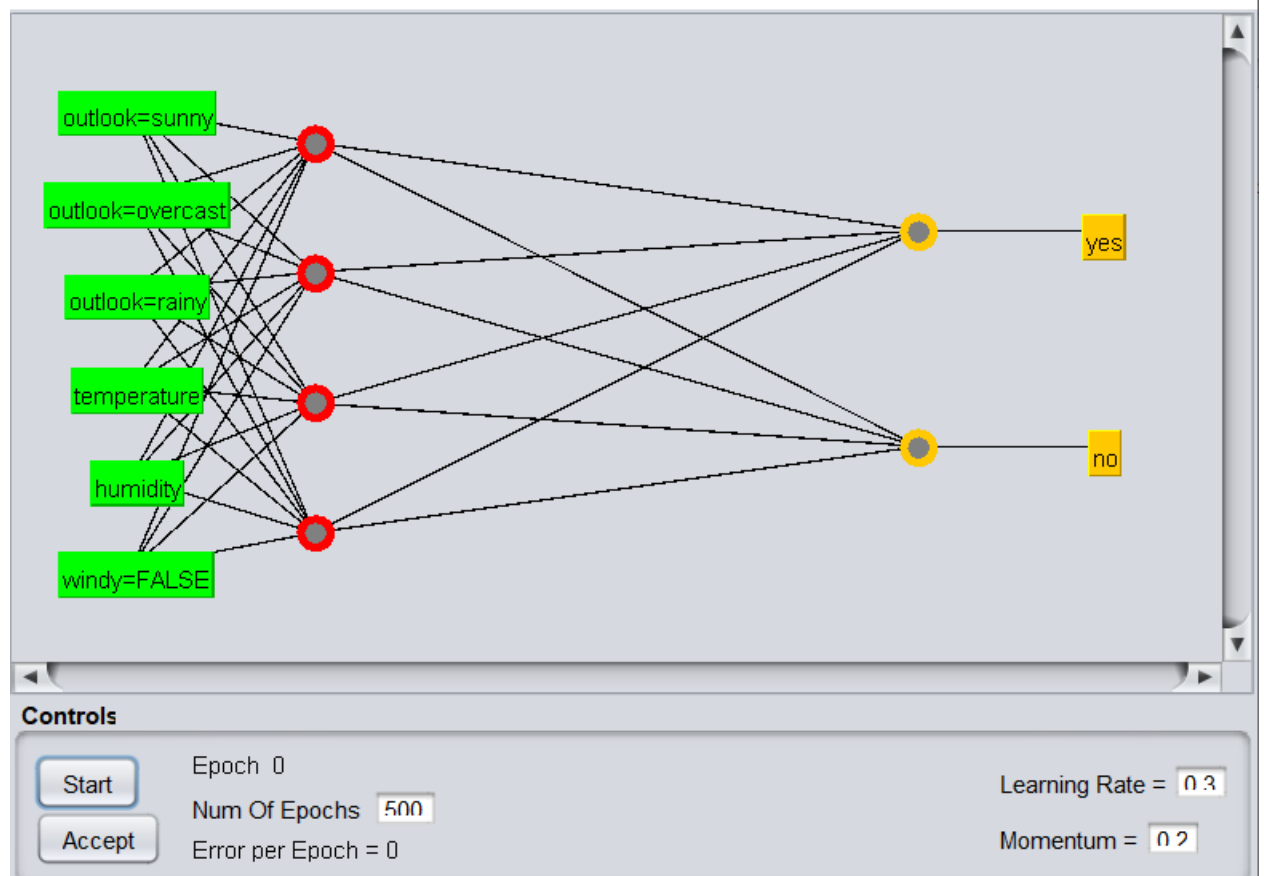
**Selected attribute**  
Name: outlook  
Missing: 0 (0%)  
Distinct: 3  
Type: Nominal  
Unique: 0 (0%)

No.	Label	Count	Weight
1	sunny	5	5.0
2	overcast	4	4.0
3	rainy	5	5.0

Class: play (Nom) [Visualize All]

Status: OK [Log] x 0

## Neural Network



=== Run information ===

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

Relation: weather

Instances: 14

Attributes: 5

outlook  
temperature  
humidity  
windy  
play

Test mode: evaluate on training data

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

Sigmoid Node 0

Inputs Weights

Threshold -3.2488354416891236

Node 2 5.706344521860183

Node 3 2.443270263208691

Node 4 2.6425576499015655

Node 5 2.5103414057156117

Sigmoid Node 1

Inputs Weights

Threshold 3.247940047055842

Node 2 -5.704744057107486

Node 3 -2.395963544940322

Node 4 -2.619413415167429

Node 5 -2.578926745531241

Sigmoid Node 2

Inputs Weights

Threshold -1.4298110453038173

Attrib outlook=sunny 1.279607413773088

Attrib outlook=overcast 2.5993304643376662

Attrib outlook=rainy -2.4821894084499005

Attrib temperature -0.9917844366897344

Attrib humidity -4.1325759725239815

Attrib windy=FALSE -0.8030823939514041

Sigmoid Node 3

Inputs Weights

Threshold -0.7740672340804504

Attrib outlook=sunny -1.9100370742566128

Attrib outlook=overcast 2.382206870768282

Attrib outlook=rainy 0.23499213125743737

Attrib temperature -0.8639638424331714

Attrib humidity -0.8117295111072014

Attrib windy=FALSE 3.092359794678844

Sigmoid Node 4

Inputs Weights

Threshold -0.7812523749731838

Attrib outlook=sunny -2.0149350612947305

Attrib outlook=overcast 2.4850160661055654

Attrib outlook=rainy 0.24297467799788994

Attrib temperature -0.9010443938018426

Attrib humidity -0.8326891162034924

Attrib windy=FALSE 3.2551200398085203  
 Sigmoid Node 5  
 Inputs Weights  
 Threshold -0.7574102682219429  
 Attrib outlook=sunny -1.9605922799976891  
 Attrib outlook=overcast 2.4819301353736045  
 Attrib outlook=rainy 0.2838381715677166  
 Attrib temperature -0.8613350411165093  
 Attrib humidity -0.7756280503535885  
 Attrib windy=FALSE 3.1699101529353455

Class yes

Input

Node 0

Class no

Input

Node 1

Time taken to build model: 85.39 seconds

=== Evaluation on training set ===

Time taken to test model on training data: 0 seconds

=== Summary ===

Correctly Classified Instances	14	100	%
Incorrectly Classified Instances	0	0	%
Kappa statistic	1		
Mean absolute error	0.036		
Root mean squared error	0.0454		
Relative absolute error	7.7533	%	
Root relative squared error	9.4618	%	
Total Number of Instances	14		

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	1,000	0,000	1,000	1,000	1,000	1,000	1,000	1,000	yes
	1,000	0,000	1,000	1,000	1,000	1,000	1,000	1,000	no
Weighted Avg.	1,000	0,000	1,000	1,000	1,000	1,000	1,000	1,000	

=== Confusion Matrix ===

a b <-- classified as

9 0 | a = yes

0 5 | b = no

## Iris

Weka Explorer

Preprocess | Classify | Cluster | Associate | Select attributes | Visualize

Open file... Open URL... Open DB... Generate... Undo Edit... Save...

Filter: Choose **None** Apply Stop

**Current relation**  
Relation: iris  
Instances: 150  
Attributes: 5  
Sum of weights: 150

**Attributes**  
All None Invert Pattern

No.	Name
1	<input checked="" type="checkbox"/> sepallength
2	<input type="checkbox"/> sepalwidth
3	<input type="checkbox"/> petallength
4	<input type="checkbox"/> petalwidth
5	<input type="checkbox"/> class

Remove

**Selected attribute**  
Name: sepallength  
Missing: 0 (0%)  
Distinct: 35  
Type: Numeric  
Unique: 9 (6%)

Statistic	Value
Minimum	4.3
Maximum	7.9
Mean	5.843
StdDev	0.828

Class: class (Nom) Visualize All

16 30 34 28 25 10 7

4.3 6.1 7.9

Status: OK Log x 0

## Neural Network

sepallength  
sepalwidth  
petallength  
petalwidth

iris-setosa  
iris-versicolor  
iris-virginica

**Controls**

Start Epoch 0  
Accept Num Of Epochs 500  
Error per Epoch = 0

Learning Rate = 0.3  
Momentum = 0.2

=== Run information ===

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

Relation: iris

Instances: 150

Attributes: 5

sepalength

sepalwidth

petallength

petalwidth

class

Test mode: evaluate on training data

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

Sigmoid Node 0

Inputs Weights

Threshold -3.5015971588434014

Node 3 -1.005811085385995

Node 4 9.07503844669134

Node 5 -4.107780453339234

Sigmoid Node 1

Inputs Weights

Threshold 1.0692845992273177

Node 3 3.898873687789407

Node 4 -9.768910360340266

Node 5 -8.59913449315135

Sigmoid Node 2

Inputs Weights

Threshold -1.0071762383436476

Node 3 -4.218406133827042

Node 4 -3.626059686321116

Node 5 8.805122981737854

Sigmoid Node 3

Inputs Weights

Threshold 3.3824855566856726

Attrib sepalength 0.9099827458022287

Attrib sepalwidth 1.5675138827531245

Attrib petallength -5.037338107319891

Attrib petalwidth -4.915469682506093

Sigmoid Node 4

Inputs Weights

Threshold -3.3305735922918323

Attrib sepalength -1.1116750023770101

Attrib sepalwidth 3.1250096866676538

Attrib petallength -4.133137022912303

Attrib petalwidth -4.079589727871457

Sigmoid Node 5

Inputs Weights

Threshold -7.496091023618097

Attrib sepalength -1.2158878822058794

Attrib sepalwidth -3.5332821317534946

Attrib petallength 8.401834252274107

Attrib petalwidth 9.460215580472836

Class Iris-setosa  
  Input  
  Node 0  
Class Iris-versicolor  
  Input  
  Node 1  
Class Iris-virginica  
  Input  
  Node 2

Time taken to build model: 16.36 seconds

=== Evaluation on training set ===

Time taken to test model on training data: 0.01 seconds

=== Summary ===

Correctly Classified Instances	148	98.6667 %
Incorrectly Classified Instances	2	1.3333 %
Kappa statistic	0.98	
Mean absolute error	0.0248	
Root mean squared error	0.0911	
Relative absolute error	5.5779 %	
Root relative squared error	19.3291 %	
Total Number of Instances	150	

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	1,000	0,000	1,000	1,000	1,000	1,000	1,000	1,000	Iris-setosa
	0,980	0,010	0,980	0,980	0,980	0,970	0,999	0,998	Iris-versicolor
	0,980	0,010	0,980	0,980	0,980	0,970	0,999	0,998	Iris-virginica
Weighted Avg.	0,987	0,007	0,987	0,987	0,987	0,980	0,999	0,999	

=== Confusion Matrix ===

```
a b c <-- classified as
50 0 0 | a = Iris-setosa
0 49 1 | b = Iris-versicolor
0 1 49 | c = Iris-virginica
```