

BAYESIAN CLASSIFICATION:

DATASET:diabetes

OUTPUT:

The screenshot displays the Weka Explorer interface with the NaiveBayes classifier selected. The 'Test options' section shows 'Percentage split' at 66%. The 'Classifier output' pane shows the following information:

```
=== Run information ===
Scheme:      weka.classifiers.bayes.NaiveBayes
Relation:    pima_diabetes
Instances:    768
Attributes:   9
  preg
  plas
  pres
  skin
  insu
  mass
  pedi
  age
  class
Test mode:    split 66.0% train, remainder test

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

Naive Bayes Classifier

Attribute      Class
               tested_negative tested_positive
               (0.65)          (0.35)
=====
preg
mean           3.4234          4.9795
std. dev.       3.0166          3.6827
weight sum      500            268
precision       1.0625          1.0625

plas
mean           109.9541         141.2581
std. dev.       26.1114          31.8728
weight sum      500            268
precision       1.4741          1.4741

pres
mean           68.1397          70.718
std. dev.       17.9834          21.4094
weight sum      500            268
precision       2.6522          2.6522

skin
mean           19.8356          22.2824
std. dev.       14.8974          17.6592
weight sum      500            268
precision       1.58            1.58

insu
mean           68.8507          100.2812
std. dev.       98.828          138.4883
weight sum      500            268
precision       4.573            4.573

mass
mean           30.3009          35.1475
std. dev.       7.6833           7.2537
weight sum      500            268
precision       0.2717            0.2717

pedi
mean           0.4297           0.5504
std. dev.       0.2986           0.3715
weight sum      500            268
precision       0.0045            0.0045

age
```

The bottom screenshot shows the same interface but with the 'Result list' pane expanded, showing the output for the '194748 - bayes.NaiveBayes' model. The 'Result list' pane shows the following information:

```
194748 - bayes.NaiveBayes
Result list (right-click for options)
```

Weka Explorer

PreprocessClassifyClusterAssociateSelect attributesVisualize

Classifier

ChooseNaiveBayes

Test options

☐ Use training set

☐ Supplied test set

☐ Cross-validation

☒ Percentage split

Folds10

%66

More options...

(Nom) class

StartStop

Result list (right-click for options)

194748 - bayes.NaiveBayes

Classifier output

pedi

mean	0.4297	0.5504
std. dev.	0.2986	0.3715
weight sum	500	268
precision	0.0045	0.0045

age

mean	31.2494	37.0808
std. dev.	11.6059	10.9146
weights sum	500	268
precision	1.1765	1.1765

Time taken to build model: 0.01 seconds

=== Evaluation on test split ===

Time taken to test model on test split: 0.01 seconds

=== Summary ===

Correctly Classified Instances	201	77.0115 %
Incorrectly Classified Instances	60	22.9885 %
Kappa statistic	0.4631	
Mean absolute error	0.266	
Root mean squared error	0.3822	
Relative absolute error	58.9747 %	
Root relative squared error	81.6432 %	
Total Number of Instances	261	

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	0.843	0.386	0.824	0.843	0.833	0.463	0.854	0.918	tested_negative
	0.614	0.157	0.646	0.614	0.630	0.463	0.854	0.760	tested_positive
Weighted Avg.	0.770	0.313	0.767	0.770	0.769	0.463	0.854	0.868	

StatusOK

27°C

Partly cloudy

Search

19:49

12-02-2023

Weka Explorer

PreprocessClassifyClusterAssociateSelect attributesVisualize

Classifier

ChooseNaiveBayes

Test options

☐ Use training set

☐ Supplied test set

☐ Cross-validation

☒ Percentage split

Folds10

%66

More options...

(Nom) class

StartStop

Result list (right-click for options)

194748 - bayes.NaiveBayes

Classifier output

mean

std. dev.	11.6059	10.9146
weight sum	500	268
precision	1.1765	1.1765

Time taken to build model: 0.01 seconds

=== Evaluation on test split ===

Time taken to test model on test split: 0.01 seconds

=== Summary ===

Correctly Classified Instances	201	77.0115 %
Incorrectly Classified Instances	60	22.9885 %
Kappa statistic	0.4631	
Mean absolute error	0.266	
Root mean squared error	0.3822	
Relative absolute error	58.9747 %	
Root relative squared error	81.6432 %	
Total Number of Instances	261	

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	0.843	0.386	0.824	0.843	0.833	0.463	0.854	0.918	tested_negative
	0.614	0.157	0.646	0.614	0.630	0.463	0.854	0.760	tested_positive
Weighted Avg.	0.770	0.313	0.767	0.770	0.769	0.463	0.854	0.868	

=== Confusion Matrix ===

a b <-- classified as

150	28	a = tested_negative
32	51	b = tested_positive

StatusOK

27°C

Partly cloudy

Search

19:49

12-02-2023