



WEKA

A Machine Learning Tool

Weka

- Waikato Environment for Knowledge Analysis
- Fully Java-based (Weka 3)
- Includes
 - Tools for data visualization
 - Algorithm for data analysis

What Can Be Done

- Weka supports data processing, clustering, classification, regression, visualization, and feature selection
- Data must be provided in one flat file or relation
- Weka provides access to SQL database using Java Database Connectivity

Why Weka

- Free availability under GNU public license
- Portability
- Comprehensive collection of data processing and modeling techniques
- Easy to use graphical interface along with library
- Extension packages

Example Using GUI

Suppose, we want to classify some data using NaiveBayes Classification.

- We need the data in CSV format. Here is a row of my CSV file:

3.21,2.44,0.77,1.22,0.66,a

Here the last value a indicates its class. The remaining values are feature values

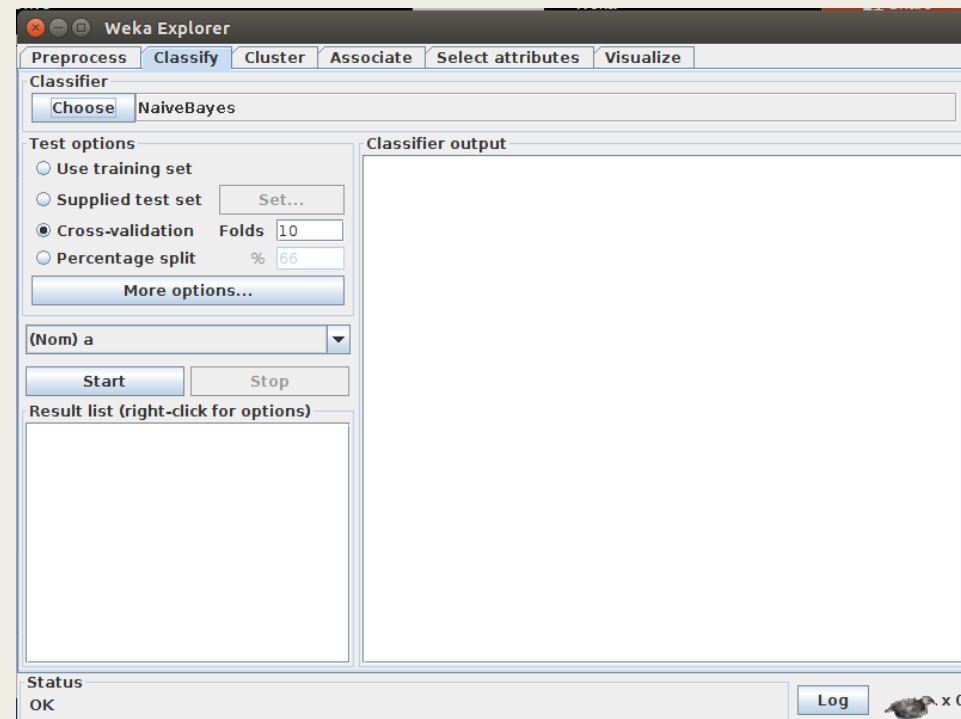
Example Using GUI (Cont.)

- Open Weka GUI
- Click on Explorer



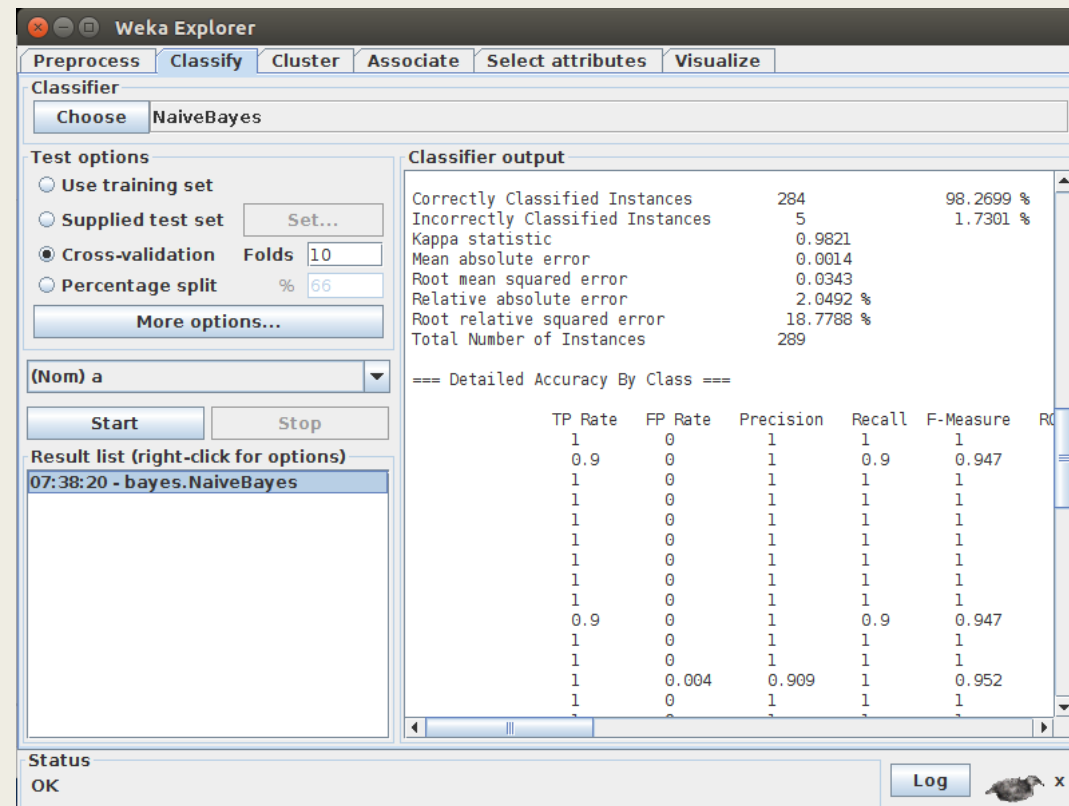
Example Using GUI (Cont.)

- Click on Open File in Preprocess tab. Select the CSV file
- Click on Classify tab and Choose NaiveBayes



Example Using GUI (Cont.)

- Click on start and we will get the result and summary statistics



The screenshot shows the Weka Explorer application window. The 'Classify' tab is selected. The classifier chosen is 'NaiveBayes'. The 'Test options' section shows 'Cross-validation' selected with 'Folds' set to 10. The 'Start' button has been clicked, and the results are displayed in the 'Classifier output' and 'Result list' areas.

Classifier output

Correctly Classified Instances	284	98.2699 %
Incorrectly Classified Instances	5	1.7301 %
Kappa statistic	0.9821	
Mean absolute error	0.0014	
Root mean squared error	0.0343	
Relative absolute error	2.0492 %	
Root relative squared error	18.7788 %	
Total Number of Instances	289	

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	ROC
1	0.9	0	1	1	0.947	
0	1	0	1	1	1	
1	1	0	1	1	1	
1	1	0	1	1	1	
1	1	0	1	1	1	
1	1	0	1	1	1	
1	1	0	1	1	1	
1	1	0	1	1	1	
1	1	0	1	1	1	
0.9	0.9	0	1	0.9	0.947	
1	1	0	1	1	1	
1	1	0	1	1	1	
1	1	0.004	0.909	1	0.952	
1	1	0	1	1	1	

Result list (right-click for options)

- 07:38:20 - bayes.NaiveBayes

Status
OK

Log x 0

Thank You!

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