Hand on Weka: Just a Taste

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Petra Kralj Novak
Petra.Kralj.Novak@ijs.si

Data Mining Tools

- Weka http://www.cs.waikato.ac.nz/ml/weka/
- Orange http://orange.biolab.si/
- Knime http://www.knime.org/
- Taverna http://www.taverna.org.uk/
- Rapid Miner http://rapid-i.com/content/view/181/196/
- ClowdFlows http://clowdflows.org/

Weka (Waikato Environment for Knowledge Analysis)

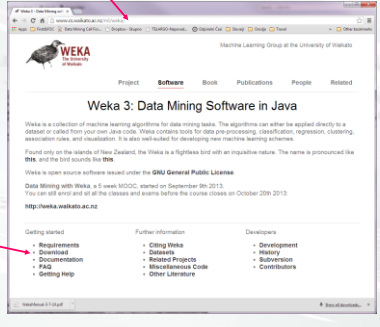
- Collection of machine learning algorithms for data mining tasks
- The algorithms
  - Can be applied directly to a dataset
  - Can be called from Java code (library)
- Weka contains tools for
  - Data pre-processing
  - Classification
  - Regression
  - Clustering
  - Association rules
  - Visualization
- Weka is open source software issued under the GNU General Public Licanse

Practice with Weka

1. Build a decision tree with the ID3 algorithm on the lenses dataset, evaluate on a separate test set

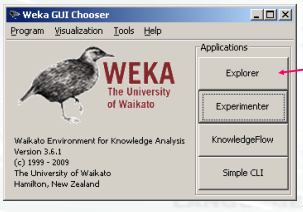
Weka: Install

http://www.cs.waikato.ac.nz/ml/weka/



Download version 3.6

Weka: Run Explorer

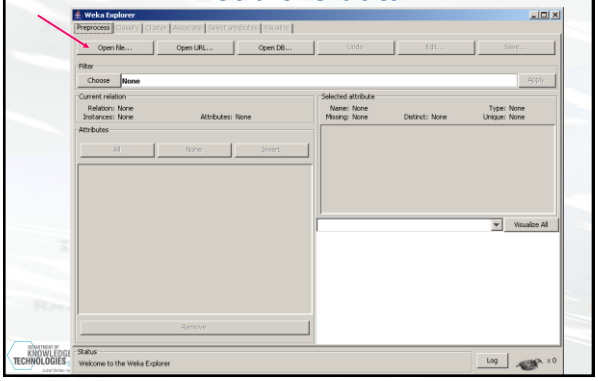


Choose Explorer

Exercise: Lenses dataset

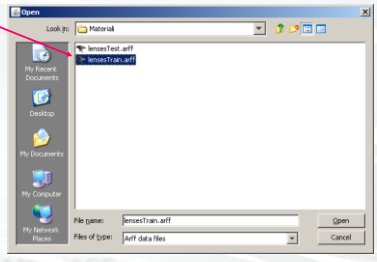
- In the Weka data mining tool, induce a decision tree for the lenses dataset with the ID3 algorithm.
- Data:
  - lensesTrain.arff
  - lensesTest.arff
- Compare the outcome with the manually obtained results.

Load the data



Load the data - 2

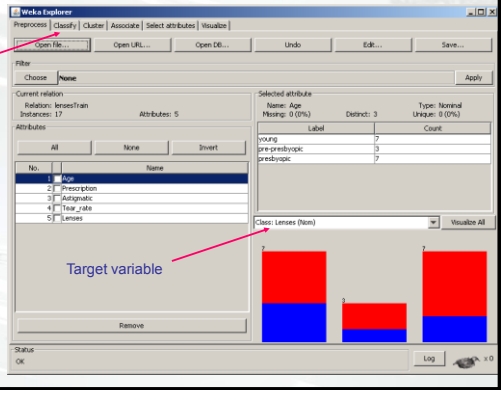
lensesTrain.arff



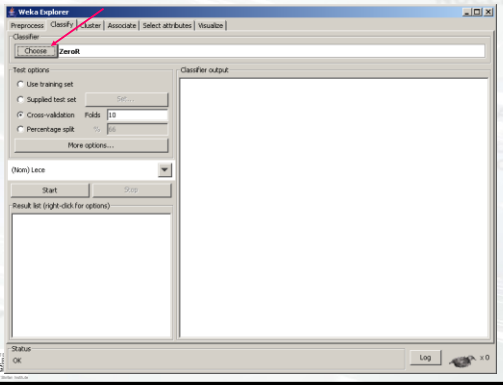
The data are loaded

Choose "Classify"

Target variable

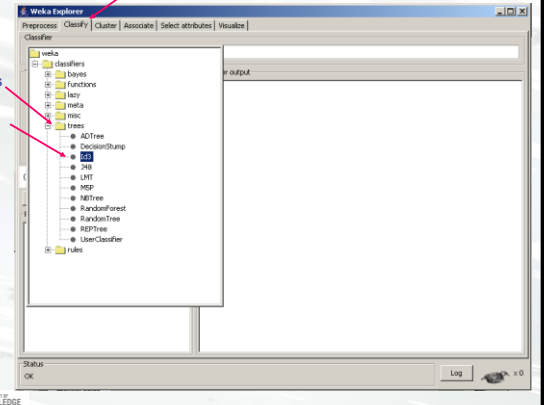


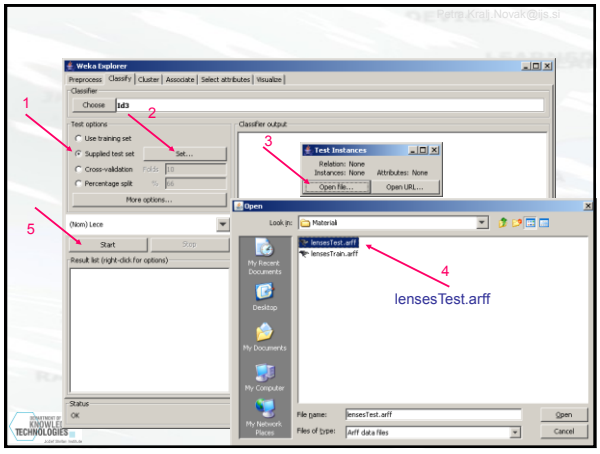
Choose algoritem

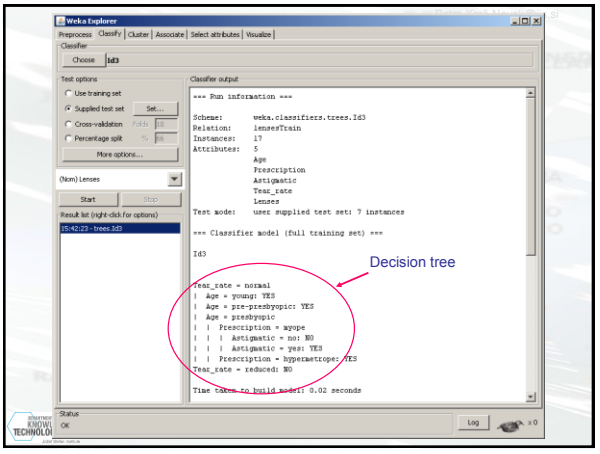


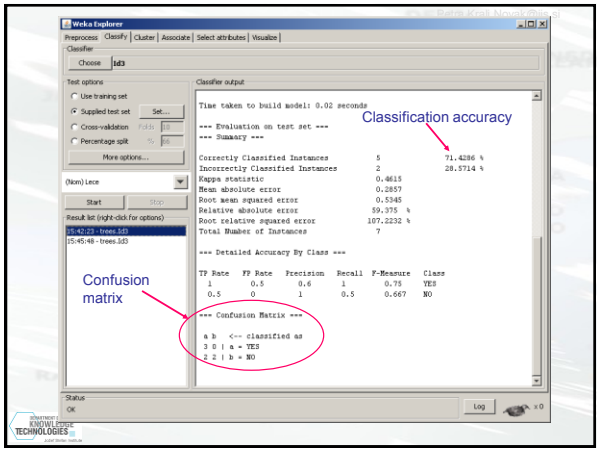
trees

Id3




1
2
3
4
5
lensesTest.arff


Decision tree


Classification accuracy
Confusion matrix