

AI in Finance Assignment 2

Submission deadline and oral presentation: December 21, 2016

The purpose of this assignment is to practice the data mining using classification and/or clustering algorithms on real-life data. As a data mining tool, the Orange package is recommended; other software packages such as STATISTICA, WEKA, SAS, R, ... may be also used.

The experiments should be carried out on the dataset Credit Rating Data US available on my Website. The dataset contains information about the past customers and their applications for credit. These customers have been classified as either “Bad” or “Good” credit risk based on their loan history with this institution.

In this project you should:

- 1) Analyze, review, and if needed preprocess the data,
- 2) Determine the attributes that are best predictors of credit ranking,
- 3) Evaluate and find a high performance predictive model that classifies/clusters customers,
- 4) Discuss your results.

Students are free to use another datasets (for ex. German Credit Data, Australian Credit Approval, private data, etc.). Some financial datasets can be downloaded from:

<http://archive.ics.uci.edu/ml/machine-learning-databases/> .

Instructions and hints:

- A. Install and become familiar with the use of the Orange package (<http://orange.biolab.si/>)
- B. Preprocess and analyse the dataset
- C. You may use and test various classifiers or clustering algorithms available in Orange
- D. Submit a report-presentation as zipped file named **ITF-name.zip** by email to: jerzy.korczak@ue.wroc.pl

The report should be a comprehensive presentation of your experiments using MS PowerPoint. You should include the following: experiment description, data analysis, key results (decision tree, rules, performance ratios, clusters) and conclusion of the experiments.

- E. Projects will be orally presented by the authors; approx. 10 min per project.

References:

- Lecture notes “IT in Finance” by J. Korczak (<http://www.korczak-leliwa.pl>)
- Doc Orange, <http://www.biolab.si>
- Lyn C. Thomas, *A survey of credit and behavioural scoring: forecasting financial risk of lending to consumers*, <http://www.sciencedirect.com/science>
- Chuang C.L., Lin R.H., *Constructing a reassigning credit scoring model*, <http://www.sciencedirect.com/science>
- Hand D.J., Heney W.E., *Statistical Classification Methods in Consumer Client Scoring : A Review*, J. R. Statist. Soc., pp.523-541, 160, 1997.