

Lab 4: Decision Rules

23.03.2019 - earlier this instruction was started by M.Deckert

Laboratories are aimed at practicing the induction of decision rules models.

1. Induce a set of decision rules from given set of learning examples.

Hangover	Exam	Weekend	Party
no	easy	no	yes
no	hard	no	no
no	no	no	yes
no	no	yes	yes
yes	easy	no	no
yes	hard	no	no
yes	no	no	no
yes	no	yes	no

2. Create an arff file from the set of learning examples given in Exercise 1.
3. Induce a set of decision rules in WEKA software using Prism classifier. Compare the result with the one from Exercise 1.
4. Induce a set of decision rules in WEKA software using JRip classifier. Compare the two sets of rules. What is the difference?
5. Go to the UC Irvine Machine Learning Repository: [UCI ML Repository](#).
6. Choose 2 different data sets concerning topics that are interesting for you - however consult them with the lab instructor and use the same / similar files to ones selected in the previous tree exercise.
7. Prepare arff files with chosen data.
8. Induce a set of decision rules in WEKA software using PART and JRip classifier. Test different parameters of the classifiers. Compare the obtained results. Induce a decision tree (C4.5). How they differ with respect to: the size of the tree, the training error and the testing error (estimated by 10-fold CV).
9. Assuming that you have learned about ensembles - carry out two next points. Choose rules or trees as component classifiers. The size of bagging should be higher than 10 classifiers.
10. Create a classifier in WEKA software using Bagging algorithm. What is its main idea?
11. Create a classifier in WEKA software using AdaBoost algorithm. How does it work?