

# Homework 6, Machine Learning

## Support vector machines

### 1 Task

The task in this homework is to experiment with SVM classifier. A widely used library for training svm-s is libsvm which can be interfaced from several programming languages. In Python, the scikit-learn SMV tools are also based on libsvm. Look for examples also here.

### 2 Data

We are using a publicly available heart dataset. The same dataset in a different format is available here.

### 3 Experiments and evaluation

Try out different options provided by the library you are using: different kernel functions, regularization parameter, kernel parameters, etc. Use k-fold cross validation to find the best setting. Compute the accuracy for each fold and print out the average accuracy of all folds.

### 4 Write-up

The report should include a short description of the task, data and the used toolkit. It should contain the detailed description of the experiments you did, what parameters did you vary, how the results changed with different parameter values. When you vary some parameter value and record the squared loss with each value, it would be good to represent such results with a figure that plots the accuracy as a function of the parameter. The report should also state clearly, which setting according to your experiments produces the best results.