2413, Machine Learning, Homework 3
Due Date: 13/11/2013
Universität Bern

Question 1 (5 points) Complete the face classification problem attached to this document, using the SVM implementation provided by the open source library VlFeat (`http://www.vlfeat.org/overview/svm.html#tut.svm`, `http://www.vlfeat.org/matlab/vl_svmtrain.html`).

Notice that the SVM formulation implemented in the library is slightly different from the formulation seen in class (`http://www.vlfeat.org/api/svm-fundamentals.html`).

You are required to:

- Write the code that calls the *vl_svmtrain* function.
- Write the code that computes the scores $f(x^{(i)}) = w^T x^{(i)} + b$.
- Run the algorithm for several values of the algorithm parameter λ and find the ones that give the best results.
- Comment the results you obtained in terms of the parameter λ: how do the results change when you increase or decrease λ?
- Compare and comment the SVM classifier with the other algorithms implemented so far.