

Applied Machine Learning

Report on Practice Assignment

YOUR TEAM

Winter Semester 2016

1 Introduction

This template is only here to guide you when writing the report. Feel free to amend this template as you wish.

When reporting on your work do not explain the techniques you are using. You do not have space for this. Focus on reporting only on the results you get when you apply these techniques. Do not forget that the report is 10 pages long maximum (single column, 10pt minimum) in PDF format. **Pages beyond the tenth one will be ignored and material in these pages will not be graded.**

2 Dataset

Describe here your dataset (dimension of data, number of images per class, number of classes, features representatives of each class). Add illustrative images of the elements in your dataset to help the reader understand what each class entails.

3 PCA

Plot examples of good and bad projections after PCA. Discuss in what these are good or bad projections. Discuss the eigenvalues of these projections.

4 Clustering

Show illustrative examples of good and bad clustering depending on the choice of hyperparameters for kNN and K-means. Compare K-means and kNN. Report on quantitative assessment of F-measure for semi-supervised clustering and how these vary depending on the ratio of labelled/unlabelled datapoints.

5 Classification

Report on performances when running the different classifiers. Report on values tested for i) the hyperparameters, ii) the training/testing ratios, iii) number of folds for crossvalidation. Give performance results only for the most interesting choices of hyperparameters, training/testing ratios and number of folds.

6 Regression

Report on performance when running the different non-linear regression methods. Report on values tested for i) the hyperparameters, ii) the training/testing ratios, iii) number of folds for crossvalidation. Give performance results only for the most interesting choices of hyperparameters, training/testing ratios and number of folds.

6.1 Overall discussion and conclusion

Offer an overall appraisal of your work and draw conclusions about the results achieved.