

SF2935 Modern Methods of Statistical Learning

Project 2

The project should be done in groups of **two**.

A computer written¹, self-containing, report of the subjects presented below should be handed in no later than **Wednesday 13 December 2017 23:00** by email to `daberg1@math.kth.se`. The **subject** of the email should be

SF2935 Project 2: Full Name 1, Full Name 2

and **name the document**

SF2935Project2-FullName1-FullName2.pdf

Also bring a **printed copy to the project presentation seminar**.

When writing down the report you do not have to insert all of the code into the report, instead describe the process of solving the exercise and also why we do things. As an example in 11 a) on page 171 we are creating a new variable, instead of just giving the code for how this variable is created, mention why we are doing this, why can't we use the original variable?

Bootstrap, Support Vector Machines and Unsupervised Learning

In this project we will study bootstrap, support vector machines presented in chapter 9 and the unsupervised clustering methods in chapter 10.3.

The written report should include the following:

- Explain the different resampling methods, cross-validation and bootstrap.
- Give an overview of support vector machines and the unsupervised clustering methods.
- Solve and present solutions to the Conceptual exercise 3 chapter 9 on page 369.
- Solve and present solutions to the Applied exercise 7 chapter 9 on page 371, compare with the previous result on the auto dataset from project 1.
- Solve and present solutions to the Applied exercise 9 chapter 5 on page 201.
- Solve and present solutions to the Conceptual exercise 3 in chapter 10 on page 414 and the Applied exercise 9 in chapter 10 on page 416.

¹Preferably using $\LaTeX$