**Lab02: Subset Selection, Shrinkage Methods and Dimension Reduction with Cross-validation**

**Handed out:** Wednesday, February 22, 2023

**Return date:** Wednesday, March 8, 2023, at the eLearning link **Lab02Submit** in the **Lab02** folder.

**Grades:** This lab counts 8 % towards your final grade

**Format of answer:** Your answers (statistical figures and verbal description) should be submitted electronically as Word document. Add a running title with the following information: Lab02, your name and page numbers. Use this document as template: add your answers for each subtask, i.e., 1 (a) etc, in a red color as well as any requested statistical figures. Trial and error answers will lead to a deduction of points. You are expected to hand in professionally formatted answers: use a fixed pitch font, like **Courier New**, for any  code and output.

## Task 1: Behavior of Stepwise Regression and Lasso with Simulated Data (3 points)

## *Show the relevant code for each sub-task. Use the default mean and standard deviation in the* ***rnorm( )*** *function. Use for all regression parameters the value 1.*

## Text, letter Description automatically generated

## A screenshot of a computer Description automatically generated with medium confidence

## Task 2: Comparison of Different Models (3 points)

*Show the relevant  code for each sub-task.* Text

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## Task 3: Bootstrap Estimation (2 points)

*Show the relevant  code for each sub-task.* ***Text

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