Assignment 11

A. Write a MATLAB script with the name Assignment11A_Gruppexx.m[1] that solves the following problem.

The file data11a.mat contains a data set ds with a design matrix X and an observation vector y. Load the data set and fit two linear regression models to the data, one with and one without intercept. Determine the model with the better fit. Make a robust fit and check for outliers.

B. Write a MATLAB script with the name Assignment11B_Gruppexx.m[2] that solves the following problem.

The file data11b.mat contains a matrix X, the rows of which are the coordinates (x_i, y_i) of points in the plane. Load the matrix and fit the two following nonlinear regression models to the data:

- Model 1: $y = a \cdot \tanh((x - b)/c)$
- Model 2: $y = a \cdot \arctan((x - b)/c)$

Plot the data points and the two fitted functions. Use the log-likelihood of the fitted models to determine which on fits the data best.

☛ Pack the script in a zip file with the name Assignment11_Groupxx.zip and submit the zip file.

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[1]xx is your group number
[2]xx is your group number