

# Homework 5

- ! For each problem, please clearly show your reasoning and write all the steps.
- G As data scientists, you should feel free to google it whenever you see something unfamiliar.
- ☺ Group discussion for the homework is encouraged, but you have to write your answer by yourself. Also, you are always welcome to discuss the problems with me.

## Task 0.

Read the relevant chapters in the textbooks listed on Sakai.

- [S-S] stands for *Understanding Machine Learning* by S S-S.

## Problem 1. (10pt)

Write a journal about what you have learned during this week. You can think about e.g. the following questions: What have you learned this week? Which topic is the most interesting? Which topic is the most difficult? What application is useful? What techniques have you mastered during the week? What can the instructor do to improve the learning process? What have you learned from your classmates?

## Problem 2. (10pt)

[S-S] Section 2.4: Problems 2.1, 2.2

You should work on the problems by yourselves and potentially discuss in groups, instead of looking at the solution manual available at this link.

## Problem 3. (10pt)

[S-S] Section 3.5: Problem 3.3

## Problem 4. (10pt)

[S-S] Section 4.5: Problem 4.2

## Problem 5. (5pt Bonus)

[S-S] Section 3.5: Problem 3.7