# Homework 2

Deadline: 05/04/2024

In this homework, you will use machine learning package Scikit-Learn (<https://scikit-learn.org/stable/index.html>) and other open-source packages to investigate binary classification models, ensemble learning techniques as well as performance assessment metrics for classification problem. You will

1) Use SVM, Logistic Regression, Decision Tree and one of the ensemble models (such as Random Forest, AdaBoost, LightGBM) to solve a classification problem.

LightGBM can be installed from <https://lightgbm.readthedocs.io/en/stable/> if you choose to use it.

2) Assess the performance of your models using various metrics such as ROC-AUC, Accuracy and F1-score.

3) Compare the performance of these models.

# Dataset

You can choose your own dataset or use scikit-learn to create artificial data set such as this: <https://scikit-learn.org/stable/modules/generated/sklearn.datasets.make_moons.html#sklearn.datasets.make_moons>

# Submission

The submission shall include code and a short write-up on performance assessment and model comparison.