Fundamentals of Machine Learning (project)

- The goal of the project is to take at least **3 out-of-the-box** models and apply them to a selected dataset.
- The dataset can be taken from Kaggle (https://www.kaggle.com/datasets) or can be a personal one.
- Recommended to work in team of 2 members (but you can have individual projects)
- First, you will build intuition for model-to-problem fit. Which models are robust to missing data? Which models handle categorical features well? Yes, you can dig through lectures/textbooks/tutorials to find the answers, but you will learn better by seeing it in action.
- Second, this project will teach you the invaluable skill of prototyping models quickly. In the real world, it is often difficult to know which model will perform best without simply trying them.
- Finally, this exercise helps you master the workflow of model building. For example, you will get to practice:
    - Importing data
    - Cleaning data
    - Splitting it into train/test or cross-validation sets
    - Pre-processing
    - Transformations
    - Feature engineering
- Write a report (no more than 10 pages) with all the steps you made, together with the results you obtain at each step. The report must contain:
    - Introduction (the problem description)
    - Data (Description, pre-processing methods, …)
    - Algorithms (pros and cons observation for each algorithm you used)
    - Results
    - Conclusions
- Write a presentation (10 slides) which emphasizes the interesting aspects you encounter during the development of the project together with the results you obtain.