PROJECT: Introduction to Machine Learning

Rauzan Sumara

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1. Project should be carried out in a group (2 students)
2. Each group will give 15 minutes presentation of their project.
3. Choose a dataset suitable for you based on the repository below:
   - "UCI machine learning": https://archive.ics.uci.edu/ml/datasets.php
   - "Mendeley Data": https://data.mendeley.com/research-data/?
   - From other sources are acceptable after consulting with me
4. The selected dataset should have **at least 1000 observations** and **at least 5 attributes/variables**.
5. Things to do in the project:
   a. Description of the dataset and your goal/objective
   b. Look at big picture of dataset, descriptive statistics and visualize the data (data exploratory analysis)
   c. Prepare the data for machine learning project (preprocessing data)
   d. Select and train the model. You can take into account one machine learning algorithm or more. You may also perform experiments to compare different models, optimize hyperparameters, fusion of algorithm or other scenarios. Please keep in mind that you are allowed to use any algorithm as long as it is suitable for your case.
   e. Evaluate the model and do prediction (i.e. check the following measures of classification: accuracy, sensitivity, specificity, F1, etc)
   f. Conclusion
6. The final project report should be delivered in the **Word file (.docx/.pdf)** with the format of a resemble conference paper, with a general outline of the form:
   - Introduction/Motivation
   - Methodology/empirical Setup (just brief knowledge of those methods with references)
   - Results & Discussion
   - Conclusion
   - References
7. You also have to prepare a documentation of your code, step-by-step in details in **Jupyter Notebook (.ipynb)**. Your steps should be clearly explained.
8. Please pay an attention to the quality of your project.
9. The projects should be delivered after presentation via email: **rauzan.sumara.dokt@pw.edu.pl** with the email title:
   "IML Lab Project 2022 – [Your Group Number]"