Computer Science Department
Universidad de Ingeniería y Tecnología

Project 2: Classification

Prof. Cristian López Del Alamo
T.A. Ariana Villegas

Activities

1. For this project, you have two options. Review the details of these Kaggle's competitions and pick one:
   a) Human Activity Recognition Using Smartphones
   b) EEG of genetic predisposition to alcoholism
2. Analyze the features of the dataset pertinent to the problem you selected in the previous step. Review the following libraries to extract features of time series. Justify your decisions.
   a) PyTS
   b) TsFresh
3. Implement two classification methods (e.g. logistic regression, SVM, KNN, decision trees and so on). Justify your decisions.
4. Report the classification metrics: F-Score, Accuracy, Confusion Matrix. Analyze and discuss the results of each method.

Report: Only one member from each team should upload the report. The document must be created in LaTeX and follow this template: Download.

The document structure should follow this outline:

1. Each team member's names must include their respective percentage of participation.
2. Introduction: Project description.
3. Dataset: Exploration and analysis of the dataset.
4. Methodology: Explanation of the model, loss functions, and regularization techniques.
5. Implementation: Include the link to Colab or GitHub where the implementation can be found, avoiding direct code placement in the report. Define a seed to replicate the results. [Optional] Relevant implementation details can also be included (error handling, parallelization, etc.).
6. Experimentation: Present results with graphs and/or tables, avoiding terminal screenshots.
7. Discussion: Interpretation of the obtained results and their relationship with the learned theory.
8. Conclusions: Summary of results, limitations, and recommendations.

** Avoid using screenshots to display results such as accuracy, F1 score, loss, or error. Instead, ensure all results are properly formatted and presented within the document.*

** The document should be **a maximum of 8 pages** and can include any number of appendices deemed appropriate.*

Library Usage: For preprocessing/methods/metrics other than the required implementation in activity 3, you are free to utilize libraries.