User Manual

Francesca de Robertis, Gabriele Etta

September 2020

1 Introduction

In the following document we present the list of file coded in the two languages, Python and R, with a brief description of the meaningful parameters and behaviour.

2 Python

All the codes are stored in the Jupyter notebooks:

- **Lasso - FW and RFW.ipynb**: exectues the FW and RFW algorithms for the Lasso problem;
- **Lasso - FW and RFW.ipynb**: exectues the FW and RFW algorithms for the Latent Group Lasso problem;
- **real_matrix.npz**: sparse matrix, slicing of the original dataset;
- **target.npy**: target values stored into an array.

3 R

All the files that are not supposed to plot results have a parameter called **synthetic_dataset** which has to be assigned to **T** if the synthetic scenario wants to be recreated, **F** otherwise. In addition to this, **setwd** function must have the desired working directory as parameter.
All the codes are stored in the **src/R** folder, the data in **data** folder, the figures plotted in **figures**.

3.1 Lasso folder

- **FW**: runs the FW algorithm
- **RFW**: runs the RFW algorithm
- **AFW**: runs the AFW algorithm

- **RAFW**: runs the RAFW algorithm
- **PFW**: runs the PFW algorithm
- **FW_RFW_Plots**: plots the results shown in paper between FW and RFW for the synthetic dataset
- **FW_RFW_Plots_Real**: plots the results shown in paper between FW and RFW for the real world dataset
- **AFW_RAFW_Plots**: plots the results shown in paper between AFW, PFW, and RAFW for the synthetic dataset
- **AFW_RAFW_Plots_Real**: plots the results shown in paper between AFW, PFW and RAFW for the real world dataset

3.2 Latent Group Lasso Folder

- **FW**: runs the FW algorithm
- **RFW**: runs the RFW algorithm
- **FW_RFW_Plots**: plots the results shown in paper between FW and RFW for the synthetic dataset