Optimization for Data Science

A Comparative Analysis of the Projected Gradient Method and the Frank-Wolfe Algorithm on Portfolio Optimization

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GROUP 16

Components:

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In the submitted folder:

-ODS_project_report_G16.pdf:

a detailed report containing the description of the theoretical and empirical studies of the Frank-Wolfe algorithm and the Projected Gradient method on the Markowitz portfolio optimization problem;

-ODS_project_code_G16.ipynb:

a. ipynb notebook containing the code (python) of the project. Note that to successfully run the code it is necessary not to rename the .xlsx files contained in the subfolder “data” and to manually upload them during the run of the code, when requested by the code itself;

-data

|_ DowJones.xlsx

|_ FTSE100.xlsx

|_ NASDAQ100.xlsx

|_ SP500.xlsx

four .xlsx files containing the datasets the implemented algorithms have been tested on. To be saved in the same directory as the ODS_project_G16.ipynb file.