Instruction for the user

Rossi Noemi, Savino Matteo Stefano

February 8, 2021

1   How to setup the environment

To be able to run our code you need to have installed on your machine:

- Eigen library
- OpenMP
- Python3.8
- pip
- cmake
- pytest
- pybind11
- the python packages: Pandas, Scipy, Networkx, Munkres and Sklearn

If you have already this requirements you can skip the following Section, if not here there are some lines of code useful to setup your environment:

- `sudo apt-get install libeigen3-dev`
- `sudo apt-get install libomp-dev`
- `sudo apt-get install python3.8`
- `sudo apt-get install python3-pip`
- `sudo apt-get install cmake`
- `sudo apt-get install python3-dev`
- `sudo apt upgrade python3-dev`
- `sudo apt install python3-pytest`
- `pip3 install Pandas`
- `pip3 install Scipy`
- `pip3 install Networkx`
- `pip3 install Munkres`
- `pip3 install Sklearn`

In case you have problems with the command `pip3 install name of the package` you can do
`sudo apt-get install python3-name of the package`.
Then you have to download form GITHUB the code of PYBIND11 [1] at `https://github.com/pybind/pybind11`.
You can do it direcltly from the command line using the code: `sudo apt-get install pybind11`, but in case you have some problem doing this you can download the folder from github as zip file extract it and execute the following lines of code in the main directory of pybind11:

- `mkdir build`

- `cd build`

- `cmake -DDOWNLOAD\_CATCH=1 ..`

- `make`

2 To run a test case in Python

Download form our GITHUB repository [2] the code of our project and run `sudo python3 setup.py install` inside the principle directory, called GraphSpace-GraphPacs, in order to do the setup.
Inside the principle folder, called GraphSpace-GraphPacs, there are three files to do three different tests. In particular with the test_GA.py you can run a test on the matcher, with test_gpc.py a test for the gpc and with the test_mean.py one for the mean. To run an example you can use the command `python3 nome\_del\_file`.

3 To run a test case in C++

The text case in C++ is run though a cmake file, so you have to do the following instruction in `src` directory to build the executable of your code.

- `mkdir build`

- `cd build`

- `cmake ..`

- `make`

Once the compilation is terminated you need to put the `.txt` file from which the GraphSet is loaded in the `build` folder. The cmake file produces two executables: `test_mean` and `test_gpc`, for respectively the two files `test_mean.cpp` and `test_gpc.cpp`. This two are very simple examples.

References

[1] Wenzel Jakob, Jason Rhinelander, and Dean Moldovan. *pybind11 – Seamless operability between C++11 and Python*. 2017. URL: `https://github.com/pybind/pybind11`.

[2] N. Rossi and M. Savino. "PACS-Project on GraphSpace". In: (2021). URL: `https://github.com/annacalissano/GraphSpace/tree/GraphPacs`.