Grr Installation & Running Instructions

Step 1: Set up Python

To run Grr (Great Rigid Registration), you are going to need Python installed, as well as all the libraries necessary. If you do not have Python on your CPU, there are multiple ways to set up the environment. This guide will go through the installation of Python using Anaconda, a python distribution and package manager that comes with many packages necessary.

To start, go to https://www.continuum.io/downloads and download the installer for your Operating System. Run the installer and follow the on-screen prompts to complete the installation.

If you do not have Python on your CPU and do not wish to use a package manager such as Anaconda, go to www.python.org/downloads/ and get the latest release of either Python 2 or 3 for your operating system. Run the installer and follow the on-screen prompts to finish installing.

Grr imports multiple different libraries. While many of them are already included in python, you need to make sure you have all of them installed on your computer. The following libraries are all imported: Numpy, Matplotlib, os, Tifffile, Tkinter, math, astropy, PIL. The FFTW library is optional, but recommended.

If using Anaconda, the only missing required library is Tifffile, as well as the option FFTW and warnings. Since Anaconda comes with pip, go to the command line and type `pip install Tifffile` to get the Tiffile package. If you so choose, you may also run `pip install pyFFTW`.

If you are not using Anaconda, to install the missing packages, use pip installer. If you do not already have pip, go to the command line and run `python -m pip install -U pip setuptools` if you are on a Windows computer or run `pip install -U pip setuptools` if on a Linux or OS X machine. (If using the most recent build of either Python 2 or 3, pip should already be installed). Once you have done this, to get all the necessary libraries, run the following in the command terminal to make sure you have each of the necessary libraries:

```
pip install numpy
pip install Matplotlib
pip install Tifffile
pip install astropy
pip install pillow
pip install pyFFTW (optional)
```

Lastly, add the location of your python library to the environment path. If on a Linux or OS X Machine, open your .bash_profile and add `export Path=~/anaconda/envs/myenv/`

`bin:$PATH` if you are using anaconda or add `export PYTHONPATH="${PYTHONPATH}:/Users/username/repos"` if not using anaconda (change the file path to the correct file path). If on a Windows machine, go to My Computer, right click and Go to Properties > Advanced System Settings > Environment Variables. Then under system variables, create a new Variable for your Python Path and put the path your python version as the Variable value.

To check to make sure your python is functioning with the path added correctly, go to the command line and type `python`. If done correctly, the current version of python should appear, as well as a list of commands for more information. After typing python, you can now run python commands directly from the shell.

Step 2: Download and Run Grr

Go to www.WHERE_WE_PUT_GRR and download the latest version. There are multiple python files, make sure these are in the same folder and the names of the files since otherwise they will not be able to access each other.

Open your command shell and run `python path\Grr\guiScript.py` filling in the path with the correct path to the folder where Grr is. Upon running this, after a few seconds, a window should open, beginning the program.