LittleBrain manual

1. To download Docker, go to: https://www.docker.com/community-edition and scroll down until you see these options. Download the Docker version that is compatible with your operating system (e.g. windows, mac):

2. Once the program "Docker" is installed, start the program "Docker" in your computer. Then open the terminal of your computer (mac: look for "Terminal"; windows: look for "Command Prompt"). Type the following in your terminal in order to download the LittleBrain docker container (this will use approximately 2.5GB of space):

If using mac or linux, type this:
docker pull xaviergp/littlebrain:3.0.0

If using windows, type this:
docker.exe pull xaviergp/littlebrain:3.0.0

3. To start LittleBrain, follow these steps:

3.1 - Start the program "Docker" in your computer.

3.2 - When Docker is running (it may take a while for Docker to start running), open the terminal of your computer (mac or linux: look for "Terminal"; windows: look for "Command Prompt"). Then type the following in your terminal:

If using mac or linux, type this in the terminal:
docker run --rm -p 8888:8888 xaviergp/littlebrain:3.0.0

If using windows, type this in the terminal:
docker.exe run --rm -p 8888:8888 xaviergp/littlebrain:3.0.0

3.3 - Copy the password that has been generated after the word "token" shown in your terminal (shown in red in the image below).


If an error occurs, re-start Docker and repeat step 3 (this will solve the issue if port 8888 is being used by a previously opened jupyter notebook).

Questions? Write to littlebraintoolbox@gmail.com or https://github.com/xaviergp/littlebrain/issues

3.4 - Open your internet browser (for example, firefox), type the address "localhost:8888", and copy the password in the text box that will appear:
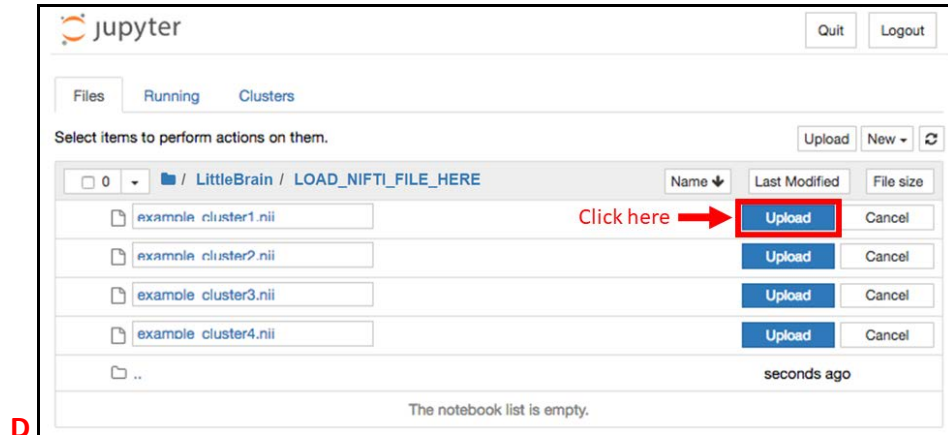

A

B
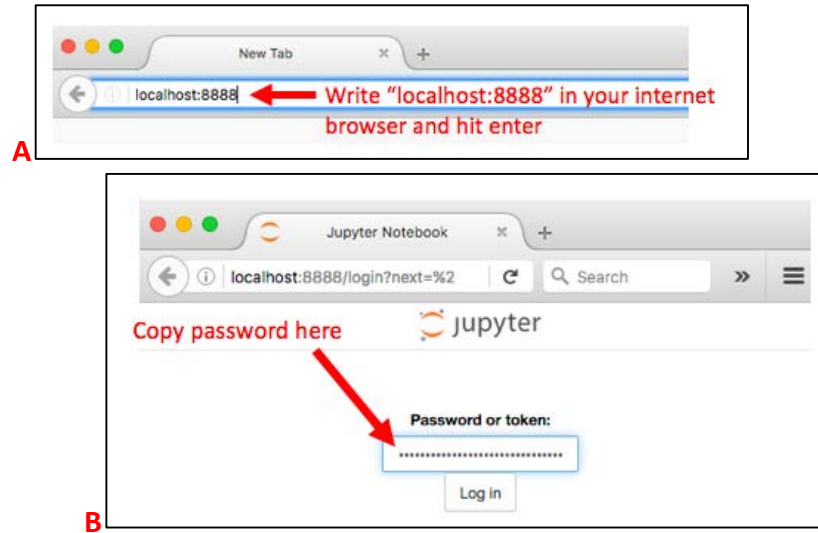
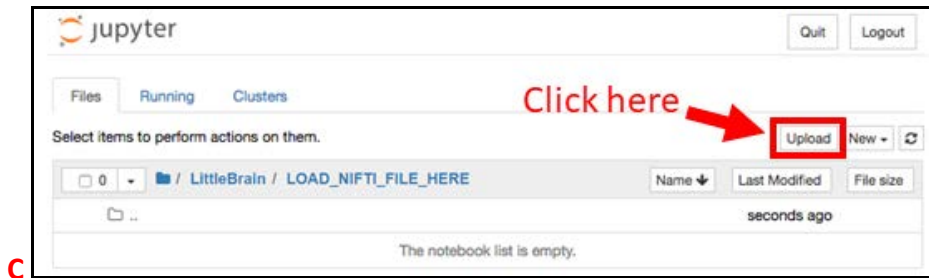**4. To upload the clusters that you want to map, go to "LittleBrain", then go to "LOAD_NIFTI_FILE_HERE", and then click "Upload".**
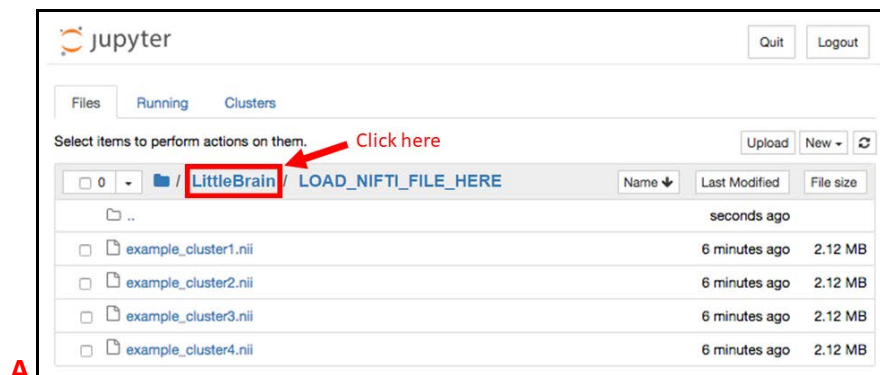

A

B

C

D
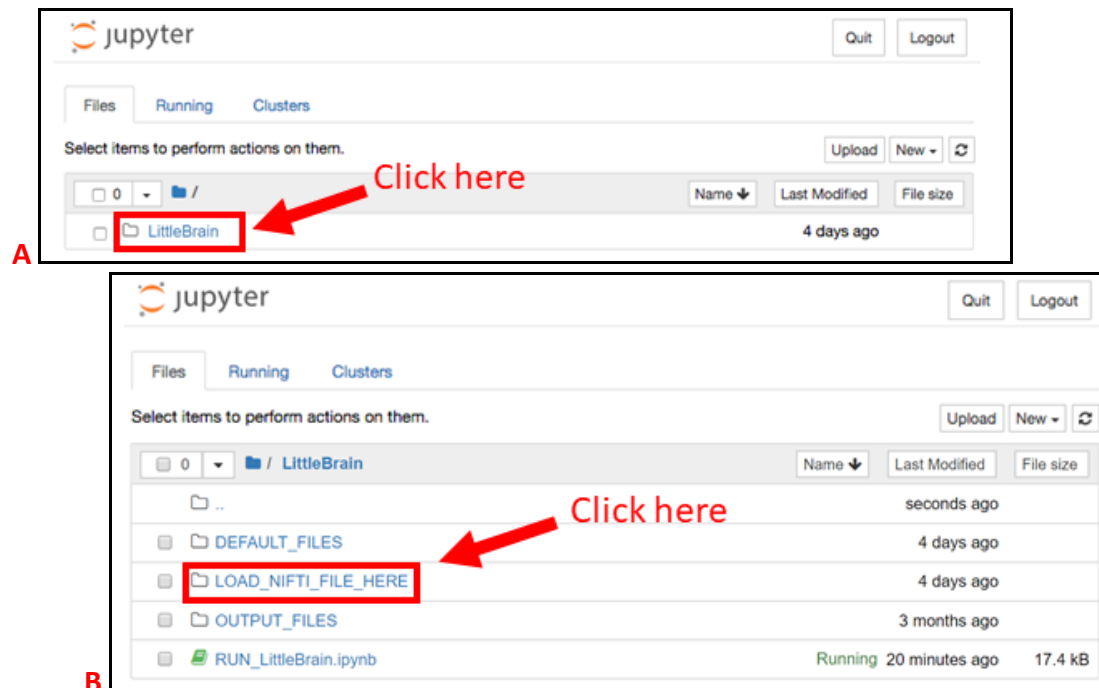
5. To start LittleBrain, go back to the "LittleBrain" folder and click "RUN_LittleBrain"

A

B

6. Follow the instructions that will appear in the screen.

A

B

Output example:

7. To download the scatterplot, go to the other tab that was opened in your browser:
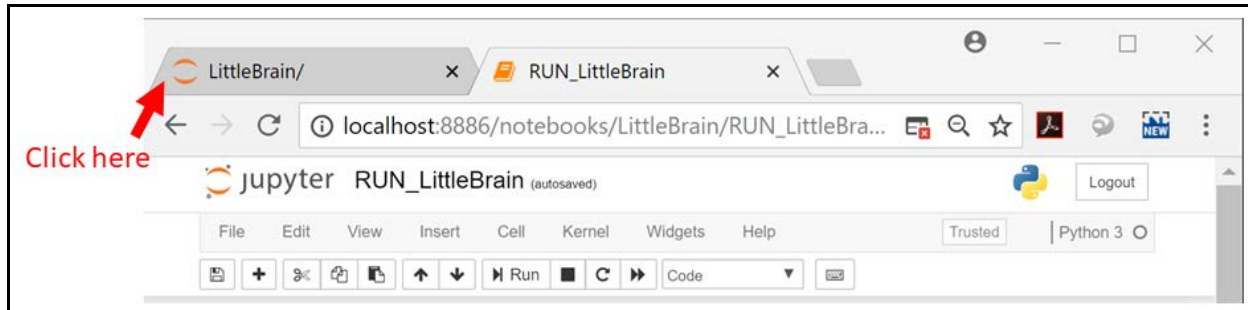
8. Go to the "OUTPUT_FILES" folder, and download "MAP.png":
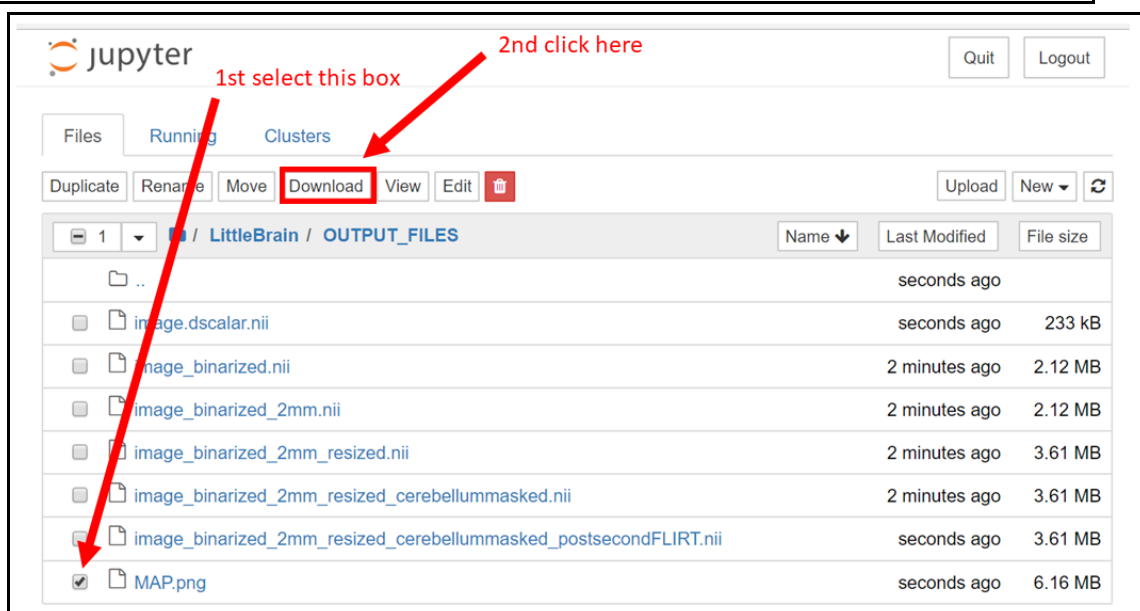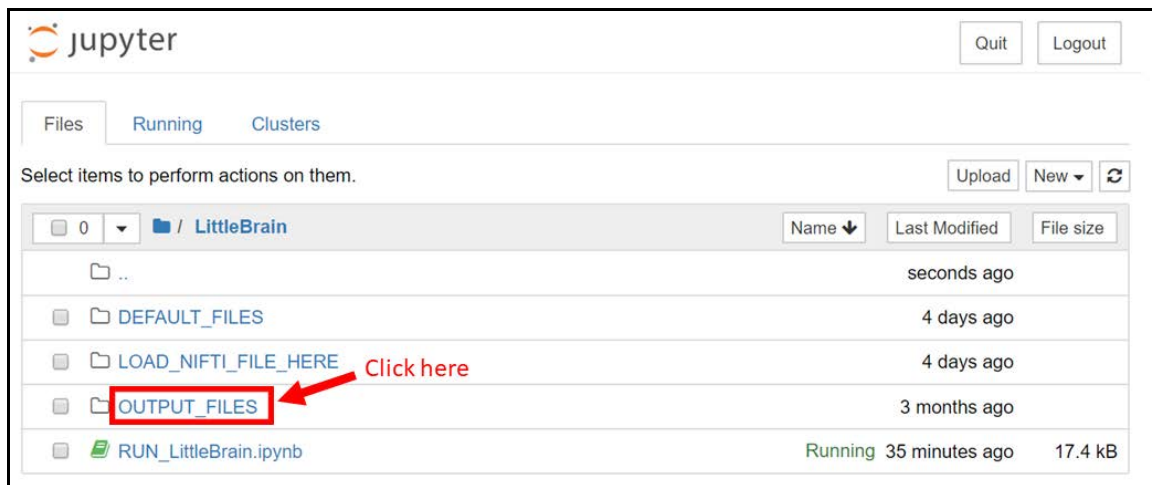
9. Additional options include:

- Check transformations (cerebellar masking, 2mm resolution change) that have occurred to the uploaded cerebellar data. This can be visualized by clicking the button "check transformations" after a map is generated. Output example:

- Generate non-binary maps. These can be generated by clicking the button "see non-binary map" after a map is generated. Output example:

- **Generate network-colored maps (where color of each dot corresponds to resting-state networks as defined in Buckner 2011 JNeurophysiolo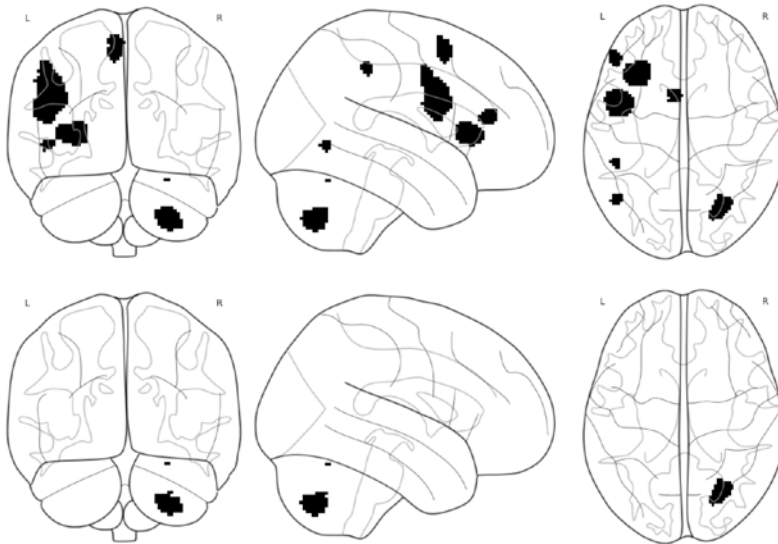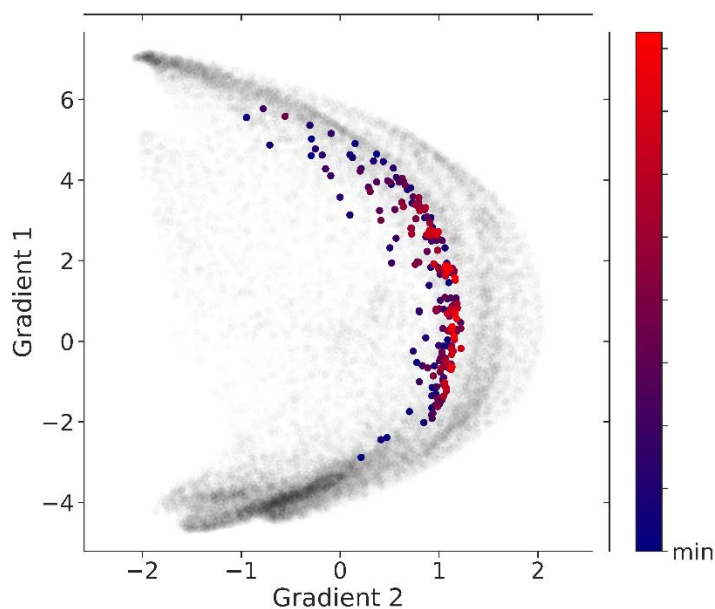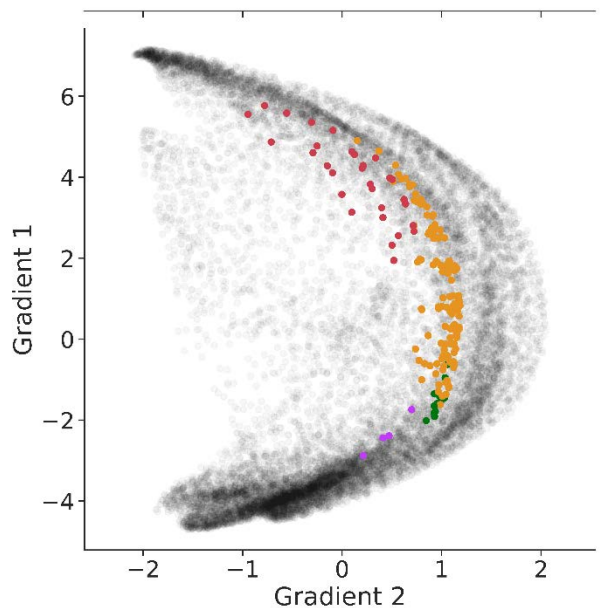gy; blue=somatomotor network, purple = ventral attention network, green = dorsal attention network, cream = limbic network, orange = frontoparietal network, red = default-mode network, dark purple = visual network). These can be generated by clicking the button "see network-colored map" after a map is generated. Output example:**

- **Download Gradient 1 and Gradient 2 values for the clusters that have been mapped. These values can be downloaded from the "OUTPUT_FILES" folder as "GRADIENT1_values.csv" and "GRADIENT2_values.csv".**

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