FNC Toolbox Walk Through

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Introduction

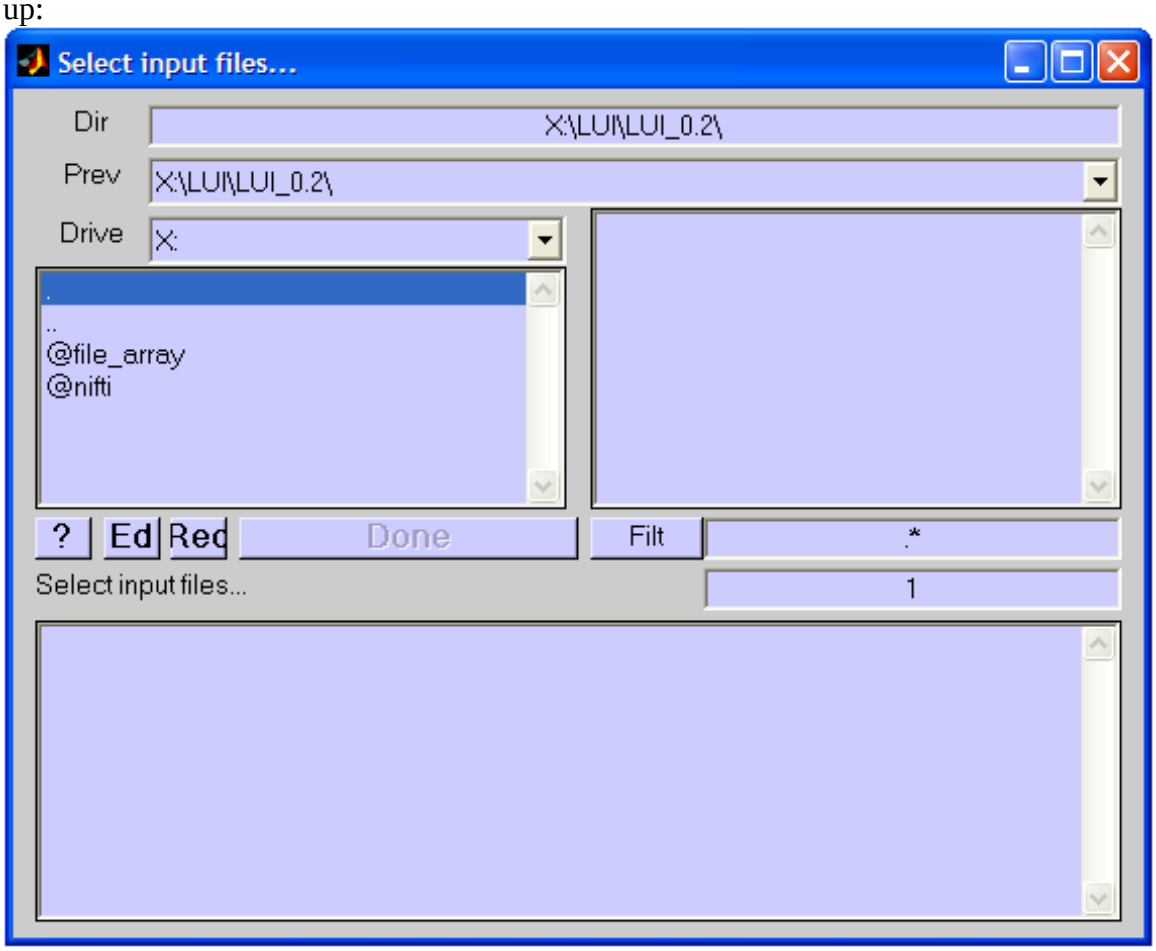
The LUI (Laterality User Interface) toolbox is a Matlab GUI that quickly computes the lateral Left-Right activation differences from a given image set. It can do this for either .img or .nii files.

Installing and Running FNC Toolbox

LUI Toolbox supports both UNIX and Windows and is installed as follows.

1) Extract the LUI.0.2.zip to a folder where you want to store the LUI Toolbox. On a PC this is usually done by copying the file to wanted folder, then right clicking the file ZIP-file and choosing “extract all” from the list of choices. Similarly extract the FncWalkData.zip into the desired location.
2) Start Matlab.
3) Go to the filepath where you installed LUI, and then type “lui” on the command prompt. The following figure should appear.

4) To begin, push the “Select Input” button. Another figure should pop up:



5) In the right window you can traverse you file directories to find the desired. In the left window you can select files to compute. Note that you can choose files from any number of folders. If you do select images from multiple folders, it is best to note the order in which the files are selected, as the output will correspond to the input order.
6) After the input is selected, click “Done”. Next, either click on “Select Output” on the first figure, or enter the file path of the output file on the text line. Selecting a folder for output using the “Select Output” button resembles the input procedure.
7) After the output folder is selected, click “Run”. The text below will indicate which file LUI is working on. It will display “Computation complete” when it is finished.

We will now describe the output file naming convention to indentify the output files. As mentioned before, the input files will be labeled according to the order in which they are selected for output. They are assigned a three digit number (i.e. 001, 002, etc…). This is to avoid potential naming clashes for input file with the same name in different folders. For each input file, the following files are generated (we use input file RPV.img as an example):

L_001_RPV.hdr
L_001_RPV.img:
This is the header and image file for the Left – Right image. Both hemispheres will be mirrors of each other.

R_001_RPV.hdr
R_001_RPV.img:
Similar to above for Right – Left.

lat_001_RPV.hdr
lat_001_RPV.img:
This is the composite of the above two image files. The left hemisphere will have the Left – Right data, while the right hemisphere will have the Right – Left data.

Lmean_RPV.hdr
Lmean_RPV.img
Rmean_RPV.hdr
Rmean_RPV.img:
This is the respective means of the left and right hemispheres of all selected files. Since we only selected one image file, there are identical to *L_001_RPV.hdr, L_001_RPV.img, Rmean_RPV.hdr,* and *Rmean_RPV.img.* Note that for multiple files, these mean files will contain the name of the last input file selected.

Mask_Rn_Ln_RPV.hdr
Mask_Rn_Ln_RPV.img
Mask_Rn_Lp_RPV.hdr
Mask_Rn_Lp_RPV.img
Mask_Rp_Ln_RPV.hdr
Mask_Rp_Ln_RPV.img
Mask_Rp_Lp_RPV.hdr
Mask_Rp_Lp_RPV.img:
These are the respective means that have filters for positive and negative values. The naming convention is: *Rn = right (negative), Ln = left (negative), Rp = right (positive), Lp = left (positive).* For example, *Mask_Rn_Ln_RPV.img* will have the Right negative data – Left negative data, and both hemispheres will be symmetric.