ADVANCED FUNCTIONAL BRAIN IMG.

Assignment 3: Optimizing preprocessing of fMRI data

Task: You need to do optimization of preprocessing step in fMRI analysis of one subject using FEAT–FMRI and MATLAB/R/python. Write your own scripts for slice time correction, high pass filtering and spatial smoothing. Range of High pass filter cut off will be from 80s to 120s.The range of spatial smoothing will be from 4mm to 8mm (FWHM). Optimize high pass filter and spatial smoothing in order to maximize the total number of voxels having z-stat value above 2.3. Rest of the preprocessing and statistical analysis should be done using FEAT-FMRI. The experimental paradigm is the same as the previous paper.

Data-Set: The data has been taken from OpenfMRI data set ds000115. For this assignment, we plan to use the data from only one subject subject001. The data is the same as in Assignment 2 and is available cerebrum.cse.iitd.ac.in:/mnt/project1/COL786/Spring17/Assign2.

Experimental Paradigm: Same as Assignment 2.

Contrasts to be generated:

1. nback-target
2. nback-target - nback-nontarget

What to submit:

1. Submit a pdf file which contains a table which contains the following information:
    a. High Pass Filter Value
    b. Spatial Smoothing Parameter
    c. Size of largest cluster
    d. Voxel in the cluster with largest z value
    e. Largest z value
2. Submit you codes.
3. Submit the design file used.
4. Submit all the zstat files created. Name the zstat file as <contrast>_<highPassValue>_<spatialSmoothParameter>_zstat_ni..gz

Add all the above files in a folder, create a zip file and upload it on the moodle in the following format: yourName_entryNo_Assignment3.zip

Submission status

Submission status	Submitted for grading
Grading status	Not graded
Due date	Tuesday, 7 March 2017, 11:55 PM
Time remaining	Assignment was submitted 1 day 12 hours late
Last modified	Thursday, 9 March 2017, 12:05 PM
File submissions	Deepak_2014EE30506_assignement3.zip
Submission comments	Comments (0)

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