

Atropos Test

Set Paths

Add the bin directory containing Atropos to the PATH:

- export PATH=\$PATH:/ipldev/scratch/eunyokim/src/BRAINS2012Dec/build/bin

Add the build directory to the PYTHONPATH:

- export PYTHONPATH=\$PYTHONPATH:**your_BRAINSStandAlone-build_dir**/NIPYPE

Code

test_Atropos.py

```
from nipy.interfaces.ants import Atropos
at = Atropos()
at.inputs.dimension = 3
at.inputs.intensity_images = ['T1_0.nii.gz', 'T1_1_fixed.nii.gz', 'T1_2_fixed.nii.gz', 'T2_0_fixed.nii.
gz', 'T2_1_fixed.nii.gz']
at.inputs.mask_image = 'T1_0_roi.nii.gz'
at.inputs.initialization = 'PriorProbabilityImages'
at.inputs.prior_probability_images = ['priorProbImages01.nii.gz', 'priorProbImages04.nii.gz',
'priorProbImages07.nii.gz',
'priorProbImages10.nii.gz', 'priorProbImages02.nii.gz', 'priorProbImages05.
nii.gz',
'priorProbImages08.nii.gz', 'priorProbImages03.nii.gz', 'priorProbImages06.
nii.gz',
'priorProbImages09.nii.gz']
at.inputs.number_of_tissue_classes = 10
at.inputs.prior_weighting = 0.8
at.inputs.prior_probability_threshold = 0.0000001
at.inputs.likelihood_model = 'Gaussian'
at.inputs.mrf_smoothing_factor = 0.2
at.inputs.mrf_radius = [1, 1, 1]
at.inputs.icm_use_synchronous_update = True
at.inputs.maximum_number_of_icm_terations = 1
at.inputs.n_iterations = 5
at.inputs.convergence_threshold = 0.000001
at.inputs.posterior_formulation = 'Socrates'
at.inputs.use_mixture_model_proportions = True
at.inputs.save_posteriors = True
print at.cmdline

result = at.run()
print result.outputs
```

Notes

A new folder in the current working directory called "*priors*" will be created. It contains renamed copies of all of the input Prior Probability Images in the form of priorProbImages%02d.nii.gz. These are then used as the input in the *--initialization* flag for the priors.

For example:

```
--initialization PriorProbabilityImages[10,priors/priorProbImages%02d.nii.gz,0.8,1e-07]
```

Inputs

Test Directory : /raid0/homes/jforbes/Desktop/test_Atropos/20130130_10priors

Intensity Images

```
T1_0.nii.gz
T1_1_fixed.nii.gz
T1_2_fixed.nii.gz
T2_0_fixed.nii.gz
T2_1_fixed.nii.gz
```

Mask Image

```
T1_0_roi.nii.gz
```

Prior Probability Images

```
priorProblImages01.nii.gz
priorProblImages02.nii.gz
priorProblImages03.nii.gz
priorProblImages04.nii.gz
priorProblImages05.nii.gz
priorProblImages06.nii.gz
priorProblImages07.nii.gz
priorProblImages08.nii.gz
priorProblImages09.nii.gz
priorProblImages10.nii.gz
```

Outputs

The output files will be placed in the current working directory.

```
POSTERIOR_01.nii.gz
POSTERIOR_02.nii.gz
POSTERIOR_03.nii.gz
POSTERIOR_04.nii.gz
POSTERIOR_05.nii.gz
POSTERIOR_06.nii.gz
POSTERIOR_07.nii.gz
POSTERIOR_08.nii.gz
POSTERIOR_09.nii.gz
POSTERIOR_10.nii.gz
```

```
T1_0_labeled.nii.gz
```

```
priors/
```

```
  priorProblImages01.nii.gz
  priorProblImages02.nii.gz
  priorProblImages03.nii.gz
  priorProblImages04.nii.gz
  priorProblImages05.nii.gz
  priorProblImages06.nii.gz
  priorProblImages07.nii.gz
  priorProblImages08.nii.gz
  priorProblImages09.nii.gz
  priorProblImages10.nii.gz
```