

# BRAINS Snap Shot Writer

## BRAINS Snap Shopt Writer

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### Description

Create 2D snap shots from multiple 3D volumes with labels. Any number of input and label could be given.

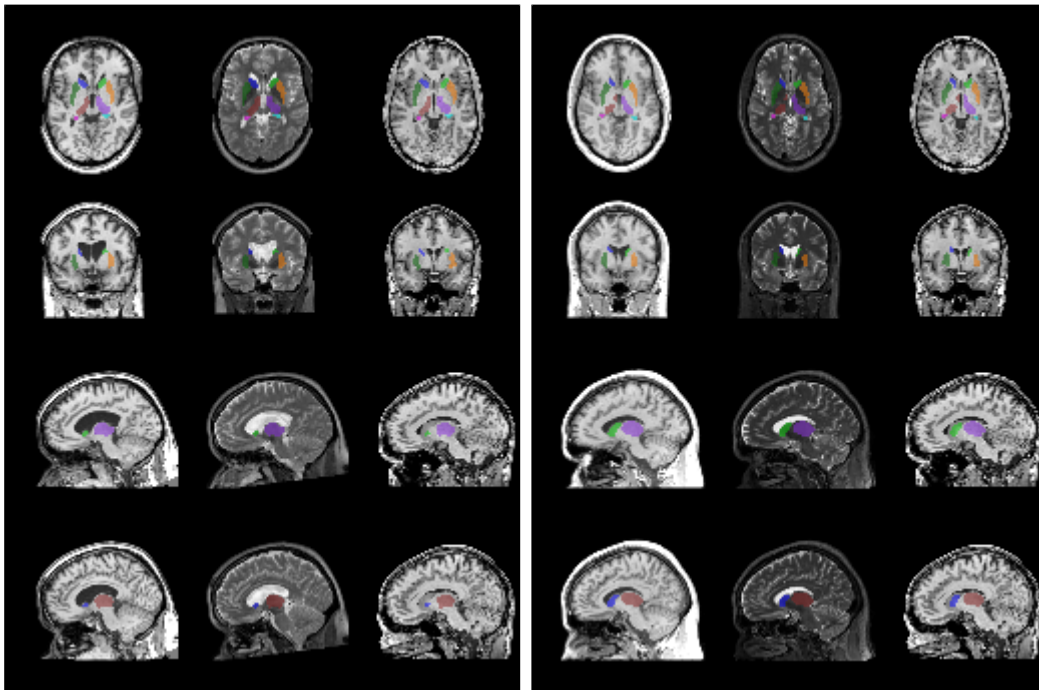
#### Required Input:

1. at least one inputVolumes (**NO DEFAULT**)
2. at least inputPlaneDirection (Default is given in xml)
3. inputSliceToExtract[InPercent/InIndex/InPhysicalPoint], This has to be paired to the number of inputPlaneDirection above. (default is given in xml)

### Batch Processing Script

This is script to generate snap shot for auto work up.

Ex)



## Bash script ex

```
for dir in `ls //scratch/PREDICT/B4AUTO.20120104/BAW_20120104_workflow/`
do

  ## t1 and t2
  t1=`ls //scratch/PREDICT/B4AUTO.20120104/BAW_20120104_workflow/$dir/l1_BABC/*t1_average*`
  t2=`ls //scratch/PREDICT/B4AUTO.20120104/BAW_20120104_workflow/$dir/l1_BABC/*t2_average*`

  # structures
  includeBinaries="";
  for file in `ls //scratch/PREDICT/B4AUTO.20120104/BAW_20120104_workflow/$dir/_structures_*/BRAINSCUT/*_seg.
nii.gz`
  do
    includeBinaries="$includeBinaries --inputBinaryVolumes $file"
  done

  inputBasename=$dir
  outputDir="/scratch/PREDICT/regina/BRAINSFitCheck/B4AUTO.20120104/"
  mkdir -p $outputDir
  outputImage="$outputDir/${inputBasename}2DImage.png"

  atlasVolume="/scratch/PREDICT/regina/BRAINS/buildICC/ReferenceAtlas-build/Atlas/Atlas_20111229/template_t1.
nii.gz"

  CMD="/scratch/PREDICT/regina/BRAINS/buildICC/lib/BRAINSSnapShotWriter \
  --inputVolumes $t1 \
  --inputVolumes $t2 \
  $includeBinaries \
  --inputVolumes $atlasVolume \
  --inputPlaneDirection 2,1,0,0 \
  --inputSliceToExtractInPhysicalPoint 0,0,10,-10 \
  --outputFilename $outputImage"

  echo "-----"
  echo $CMD
  if [ -s $outputImage ]; then
    echo "exist"
  else
    script="$outputDir//Script$inputBasename.sh"
    echo "$CMD" > $script
    chmod 755 $script
  fi
  echo "-----"

done
```

## Help

```
$ BRAINSSnapShotWriter --help
```

USAGE:

```
../../../../buildBRAINSCut201111215/lib/BRAINSSnapShotWriter
  [--returnparameterfile
  <std::string>]
  [--processinformationaddress
  <std::string>] [--xml] [--echo]
  [--outputFilename <std::string>]
  [--inputPlaneDirection
  <std::vector<int>>]
  [--inputSliceToExtractInPercent
  <std::vector<int>>]
  [--inputSliceToExtractInIndex
  <std::vector<int>>]
  [--inputSliceToExtractInPhysicalPoi
  nt <std::vector<float>>]
  [--inputBinaryVolumes
```

```
<std::vector<std::string>>] ...
[--inputVolumes
<std::vector<std::string>>] ...
[--] [--version] [-h]
```

Where:

```
--returnparameterfile <std::string>
  Filename in which to write simple return parameters (int, float,
  int-vector, etc.) as opposed to bulk return parameters (image,
  geometry, transform, measurement, table).

--processinformationaddress <std::string>
  Address of a structure to store process information (progress, abort,
  etc.). (default: 0)

--xml
  Produce xml description of command line arguments (default: 0)

--echo
  Echo the command line arguments (default: 0)

--outputFilename <std::string>
  2D file name of input images. Required.

--inputPlaneDirection <std::vector<int>>
  Plane to display. In general, 0=saggital, 1=coronal, and 2=axial
  plane. (default: 0,1,2)

--inputSliceToExtractInPercent <std::vector<int>>
  2D slice number of input images. Percentage input from 0%-100%. (ex.
  --inputSliceToExtractInPercent 50,50,50)

--inputSliceToExtractInIndex <std::vector<int>>
  2D slice number of input images. For size of 256*256*256 image, 128 is
  usually used.

--inputSliceToExtractInPhysicalPoint <std::vector<float>>
  2D slice number of input images. For autoWorkUp output, which AC-PC
  aligned, 0,0,0 will be the center.

--inputBinaryVolumes <std::vector<std::string>> (accepted multiple
  times)
  Input mask (binary) volume list to be extracted as 2D image. Multiple
  input is possible.

--inputVolumes <std::vector<std::string>> (accepted multiple times)
  Input image volume list to be extracted as 2D image. Multiple input is
  possible. At least one input is required.

--, --ignore_rest
  Ignores the rest of the labeled arguments following this flag.

--version
  Displays version information and exits.

-h, --help
  Displays usage information and exits.
```

Description: Create 2D snapshot of input images. Mask images are color-coded

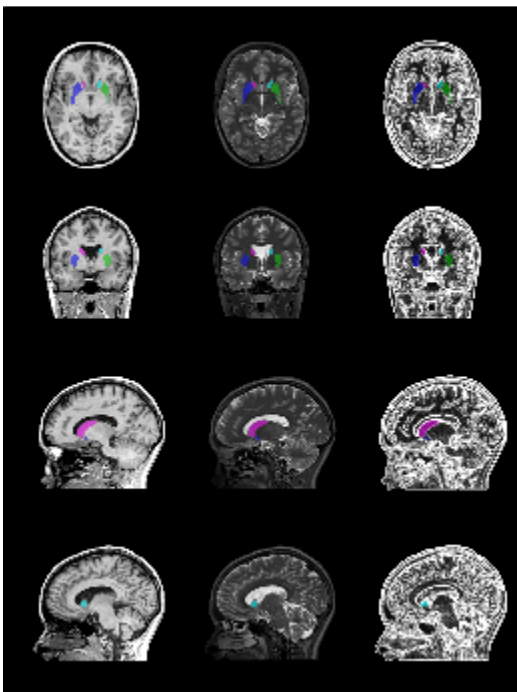
Author(s): Eunyoung Regina Kim

## Usage

Usage A. index input by voxel index:

### inputSliceToExtractInIndex Usage

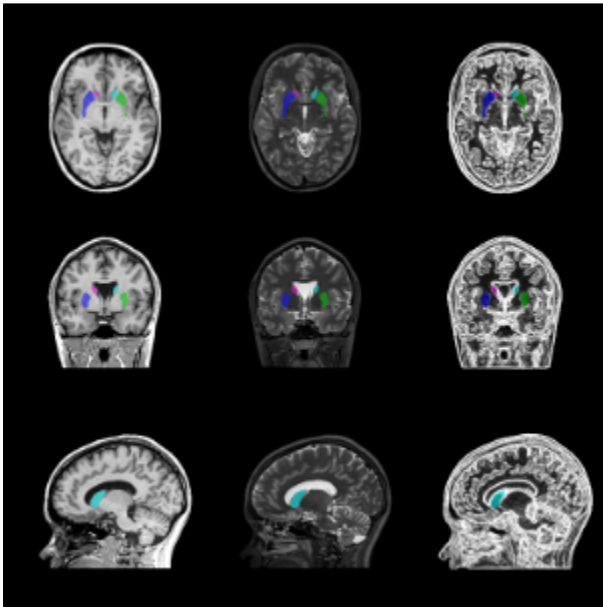
```
BRAINSSnapshotWriter \  
--inputVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418/43971_AVG_T1.nii.gz \  
--inputVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418/43971_AVG_T2.nii.gz \  
--inputVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418/43971_SG.nii.gz \  
--inputBinaryVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418  
/ANN2011May04ManualCompleted/43971_l_putamen.nii.gz \  
--inputBinaryVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418  
/ANN2011May04ManualCompleted/43971_r_putamen.nii.gz \  
--inputBinaryVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418  
/ANN2011May04ManualCompleted/43971_l_caudate.nii.gz \  
--inputBinaryVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418  
/ANN2011May04ManualCompleted/43971_r_caudate.nii.gz \  
--inputPlaneDirection 2,1,0,0 \  
--inputSliceToExtractInIndex 128,128,115,135 \  
--outputFilename ~/Desktop/testIndex.png
```



Usage B. index input by physical points:

### inputSliceToExtractInPhysicalPoint

```
BRAINSSnapshotWriter \  
--inputVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418/43971_AVG_T1.nii.gz \  
--inputVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418/43971_AVG_T2.nii.gz \  
--inputVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418/43971_SG.nii.gz \  
--inputBinaryVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418  
/ANN2011May04ManualCompleted/43971_l_putamen.nii.gz \  
--inputBinaryVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418  
/ANN2011May04ManualCompleted/43971_r_putamen.nii.gz \  
--inputBinaryVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418  
/ANN2011May04ManualCompleted/43971_l_caudate.nii.gz \  
--inputBinaryVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418  
/ANN2011May04ManualCompleted/43971_r_caudate.nii.gz \  
--inputPlaneDirection 2,1,0 \  
--inputSliceToExtractInPhysicalPoint 0,0,10 \  
--outputFilename ~/Desktop/testPhysicalPoints.png
```



Usage C. index input by percent:

#### inputSliceToExtractInPercent

```

BRAINSnapShotWriter \
--inputVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418/43971_AVG_T1.nii.gz \
--inputVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418/43971_AVG_T2.nii.gz \
--inputBinaryVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418
/ANN2011May04ManualCompleted/43971_l_putamen.nii.gz \
--inputBinaryVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418
/ANN2011May04ManualCompleted/43971_r_putamen.nii.gz \
--inputBinaryVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418
/ANN2011May04ManualCompleted/43971_l_caudate.nii.gz \
--inputBinaryVolumes /paulsen/IPIG/predict_3T_MR/site-073/2334/43971/10_AUTO.NN3Tv20110418
/ANN2011May04ManualCompleted/43971_r_caudate.nii.gz \
--inputPlaneDirection 2,1,0,0 \
--inputSliceToExtractInPercent 50,50,40,60 \
--outputFilename ~/Desktop/testPercents.png

```

