

mri_reface test: 06/09/2023

- Downloaded file to swap in from NITRC:

```
/Volumes/Main/Working/Tool_Testing/neuroimaging/deidentification/mri_reface/code/ADIR_nii2dicom.py
```

- Enter container with bind mount (so I can copy ADIR_nii2dcm.py to the inside of the docker container):

```
docker run -ti -v ${PWD}:/nifit_dir mri_reface
```

- Copy file into docker container and make consistent and executable

```
root@4fa22cbd1e16:/bin/mlrtapp# ls
ADIR_MarkDICOMDeidentified ADIR_nii2dicom CHANGES.txt image_handling __init__.py
LICENSE.txt mri_reface README.txt run_mri_reface.sh
root@4fa22cbd1e16:/bin/mlrtapp# cp /nifit_dir/ADIR_nii2dicom.py .
root@4fa22cbd1e16:/bin/mlrtapp# mv ADIR_nii2dicom ADIR_nii2dicom.old
root@4fa22cbd1e16:/bin/mlrtapp# mv ADIR_nii2dicom.py ADIR_nii2dicom
root@4fa22cbd1e16:/bin/mlrtapp# chmod a+x ADIR_nii2dicom
```

- Save the revised Docker container as mri_reface2:

I did this in another terminal window while still inside the container in the first terminal, just so I would not lose it.

```
# Get container ID
docker container ls -a
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS          NAMES
4fa22cbd1e16  mri_reface  "/bin/bash"             11 minutes ago Up 11 minutes          focused_babbage

# This creates the revised Docker image using the container ID
docker container commit 4fa22cbd1e16 mri_reface2

# Confirm the new image exists
docker image ls
REPOSITORY      TAG         IMAGE ID      CREATED        SIZE
mri_reface2     latest    405b7da0451e  5 seconds ago  11.5GB
```

- Revise script to call revised Docker container

```
cd
/Volumes/Main/Working/Tool_Testing/neuroimaging/deidentification/mri_reface/code/mri_reface_docker

cp run_mri_reface_docker.sh run_mri_reface2_docker.sh
```

- Call the revised container on NIfTI data

```
# Put the script in my path using my addpath alias
addpath
/Volumes/Main/Working/Tool_Testing/neuroimaging/deidentification/mri_reface/code/mri_reface_docker

# Go to the data directory
cd
/Volumes/Main/Working/Tool_Testing/neuroimaging/deidentification/mri_reface/data/inputs/MRIS/data/sub-219/ses-itbs

# Test basic functionality with NIfTI data
run_mri_reface2_docker.sh anat/sub-219_ses-itbs_T1w.nii out3 -imType T1
```

- Call the revised container on DICOM data

```
# Go to the DICOM test directory
cd
/Volumes/Main/Working/Tool_Testing/neuroimaging/deidentification/mri_reface/data/inputs/dicom_deface_data/219

# Make an output directory (may not be necessary)
mkdir out3

# Test functionality on DICOM data
run_mri_reface2_docker.sh T1_mprage_1mm_13 out3 -imType T1
```

- Sad results: dcm directory is empty

```
dpat@saci 219 % run_mri_reface2_docker.sh T1_mprage_1mm_13 out3 -imType T1
You provided a directory for an input, rather than a nii file. We will assume it contains DICOM for a single series. Using the -imType flag is highly recommended with this workflow.
Running dcm2niix to convert to nii
Chris Rorden's dcm2niix version v1.0.20230411 (JP2:OpenJPEG) (JP-LS:CharLS) GCC8.4.0 x86-64 (64-bit Linux)
Found 176 DICOM file(s)
Convert 176 DICOM as /tmp/tmp.mVsldzSleY/T1_mprage_1mm_13_T1_mprage_1mm_20180706110327_13 (256x256x176x1)
Conversion required 1.772277 seconds (0.542754 for core code).
'/tmp/tmp.mVsldzSleY/T1_mprage_1mm_13_T1_mprage_1mm_20180706110327_13.nii' ->
'/var/folders/34/ykzx8hn52q2p5d_23pc90ww0000gn/T/tmp.dkx2jTK1/outputs/T1_mprage_1mm_13_T1_mprage_1mm_20180706110327_13.nii'
```

Running mri_reface, version 0.3.2

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Temp directory: /tmp/tpblf1fa4b_afd1_4c02_9e57_e95e406d0cbd

Target file: /tmp/tmp.mVs1dzSleY/T1_mprage_1mm_13_T1_mprage_1mm_20180706110327_13.nii

Output directory: /var/folders/34/ykz8hn52q2p5d_23pc90ww0000gn/T/tmp.dkx2jTK1/outputs

Target image type: T1

Template: /root/.mcrCache9.12/mri_re0/mri_reface/images/MCALT_FaceTemplate_T1.nii

Face atlas: /root/.mcrCache9.12/mri_re0/mri_reface/images/MCALT_FaceMask.nii

Calculating affine parameters to template. This will take some time.

Using face-optimized affine.

Estimating warp to template using ANTS. This will take a *while*.

Transforming images to input space using antsApplyTransforms

Finding face regions using the atlas

Matching intensities of warped-template to input (DBC)

Adding Rician noise to template to match noise levels *in* input image, with multiplier 1

Estimated noise PSF: 0

Noise *in* target image norm region: 6.187167 (2.791533%)

Noise *in* template image norm region: 2.160575 (0.974810%)

Noise to add: 5.797668 (2.615798%)

Noise *in* target image air: 0.440074 (16.009274%)

Noise *in* template image air: 0.027489 (1.000019%)

Noise to add *in* air: 0.439215 (210.910828%)

Replacing face

Replacing air

Saving outputs

Saved: T1_mprage_1mm_13_T1_mprage_1mm_20180706110327_13_deFaced.nii

Generating renders *for* QC use

Saved: T1_mprage_1mm_13_T1_mprage_1mm_20180706110327_13.png

Saved: T1_mprage_1mm_13_T1_mprage_1mm_20180706110327_13_deFaced.png

ADIR_ReFace finished *in*: 20.3829 minutes

DICOM file directory is empty.

De-faced DICOM was written to

/var/folders/34/ykz8hn52q2p5d_23pc90ww0000gn/T/tmp.dkx2jTK1/outputs/dcm. This DICOM metadata is NOT otherwise de-identified. Only de-facing was performed. If you need the meta-data de-identified also, you should run it through your preferred DICOM de-identification software.