

## One Example Course of FAIRT

This is an example manual of FAIRT for windows user. For linux user, the steps are similar.

Step1.

Download FAIRT at <https://github.com/cain106002/FAIRT/releases/latest>. Please note that all six .h5 files and source code should be all downloaded.

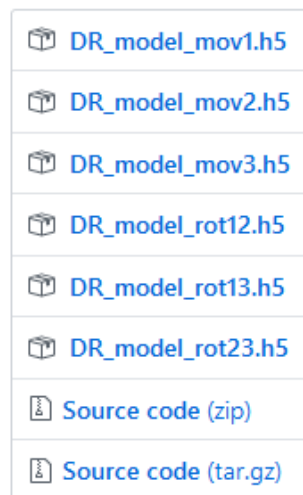


Fig.1

Step2.

Uncompress the source code. Put all files into one directory like Fig.2.

A screenshot of a Windows File Explorer window showing the contents of the FAIRT directory. The address bar shows the path (D:) > FAIRT\_Test > FAIRT. The table below lists the files and folders in the directory.

名称	修改日期	类型	大小
DR_model_mov1.h5	2019/9/28 9:16	H5 文件	247,451 KB
DR_model_mov2.h5	2019/9/28 17:40	H5 文件	247,451 KB
DR_model_mov3.h5	2019/9/29 12:41	H5 文件	247,451 KB
DR_model_rot12.h5	2019/9/21 8:16	H5 文件	247,451 KB
DR_model_rot13.h5	2019/9/21 12:02	H5 文件	247,452 KB
DR_model_rot23.h5	2019/9/21 15:23	H5 文件	247,452 KB
F_deep_reorient.m	2019/10/2 14:37	MATLAB Code	6 KB
F_Reorient.py	2019/10/1 12:08	PY 文件	4 KB

Fig.2

Step3.

Download the DATA\_TEST.rar and uncompress it. The uncompressed data was as Fig.3.

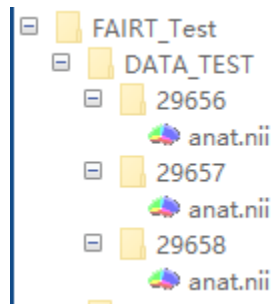


Fig.3

Step4-6 were constructing the running environment. They should be done only at the first time running FAIRT. Here we suggest to use the virtual environment of Anaconda

Step4.

Download Anaconda3.x at <https://www.anaconda.com/distribution/#download-section> and install it.

Step5.

Open anaconda prompt, and create a virtual environment named FAIRT\_ENV

```
conda create -n FAIRT_ENV
```



Fig.4

Step6.

Activate FAIRT\_ENV. If it is successful, the prefix would turn to FAIRT\_ENV.

```
conda activate FAIRT_ENV
```




```
(base) C:\Users\cain>conda activate FAIRT_ENV
```

Fig.5

Install tensorflow and keras. The python running environment was constructed. Close the anaconda prompt

```
pip install tensorflow
```

```
pip install keras
```



```
(FAIRT_ENV) C:\Users\cain>pip install tensorflow
```



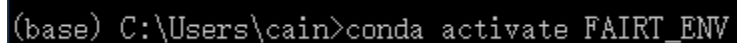
```
(FAIRT_ENV) C:\Users\cain>pip install keras
```

Fig.6

Step7.

Open anaconda prompt and activate FAIRT\_ENV

```
conda activate FAIRT_ENV
```

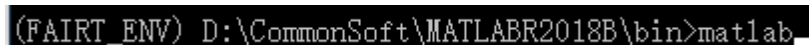


```
(base) C:\Users\cain>conda activate FAIRT_ENV
```

Fig.7

Step8.

Open matlab under the FAIRT\_ENV. cd to the bin path of MATLAB and then type matlab



```
(FAIRT_ENV) D:\CommonSoft\MATLABR2018B\bin>matlab_
```

Fig.8

Step9.

The downloaded files were arranged as Fig.9

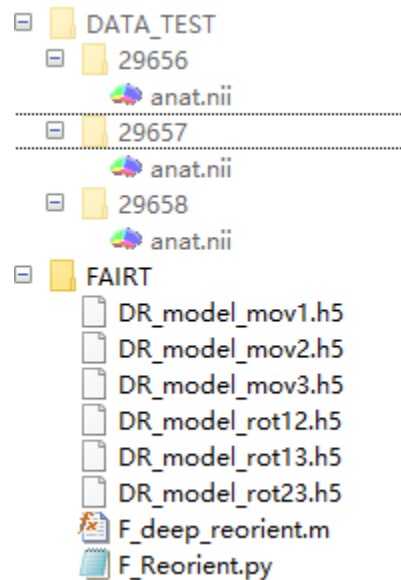


Fig.9

Step10.

cd to the FAIRT directory. (**important!**)

Step11.

Run FAIRT. The first parameter is the directory path storing .nii files. The second parameter is the directory path storing the output files. The third parameter is the directory path storing temporary files, it should be an empty directory and it will be deleted after the process is done.

```
F_deep_reorient('..\DATA_TEST','..\DATA_OUT','..\DATA_TMP')
```

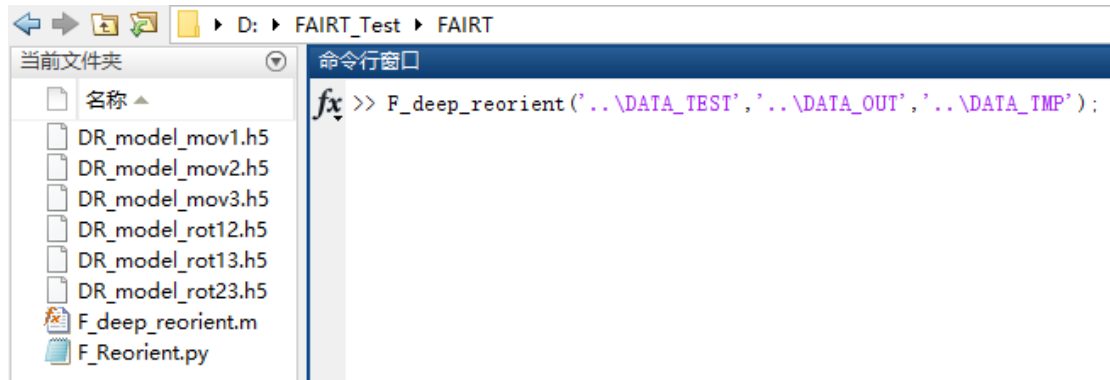


Fig.10

Step12.

The result data was stored in DATA\_OUT.

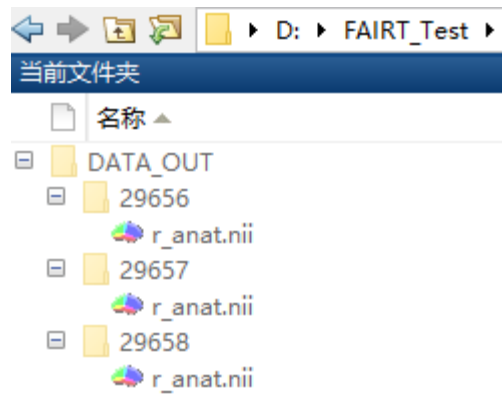


Fig.11