ML in Medical Imaging. Multi-Task Learning

1. Downloading the data

1. Clone/download the code file
2. Download the image dataset from https://zenodo.org/record/7013610#.ZEgRROzP23I. Store the images in a folder named `data` **at the same level** as the main folder that contains the code.
3. (Optional) Download the trained models from https://liveuclac-my.sharepoint.com/:f:/g/personal/rmapasr_ucl_ac_uk/EldJqhPlzvhDjnJZb0GiYYABB_NJhURn98r4nxJ55A7sxw?e=M7L7fg Store them in a folder named `models` **inside** the main folder that contains the code.

2. Set up the environment

Run the following script to set up a new Conda environment and install the necessary packages:

```
conda create --name mphy0041-cw2 -c conda-forge numpy nibabel matplotlib tensorflow=2.10 pytorch=1.12 monai
conda install -c anaconda pathlib
```

3. Train & test the models

Modify the first few lines of code in the file `main.py`. Each parameter can take a value of 1 (True) or 0 (False):

```
# Choose whether to train and/or test model(s)
TRAIN           = 1
TEST            = 1

# Choose which models to test
BASE_CASE       = 1
AUX_SEGMENT_3   = 1
AUX_SEGMENT_6   = 1
AUX_RECONSTRUCT = 1
```

Run the following script on the command line:

```
python main.py
```