Module 3 – Report

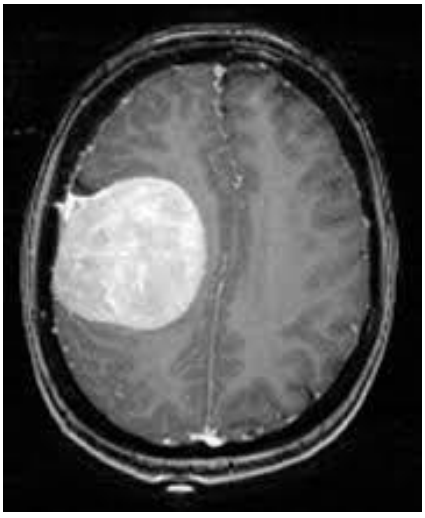
The script has to be launch with the following structure ;

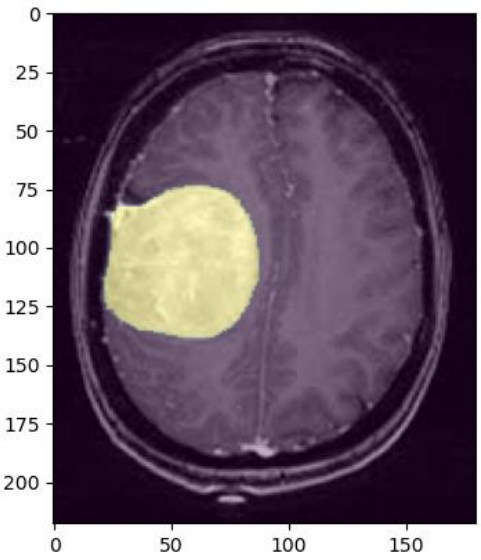
python segmentation.py *path_to_your_picture*

The process is fully automatized. The steps are the following :

1. Create a normalized histogram from the source image (MRI)
   ➔ The histogram is truncated to omit low-light values
2. Determine the threshold needed for segmentation with the *optimal threshold* method
3. The source image is segmented with the threshold value, a shift is a applied on the threshold
4. Apply the morphological transform *CLOSE* to take into account the pixels inside the tumor region that could have been omitted by the segmentation
5. Apply the morphological transform *OPEN* to remove the 'noise' caused by false-positive pixels outside the tumor area
6. Approximate the tumor area, knowing that every positive pixel represents an area of 0.125*0.125 cm² (=0.013225)

Below is the result obtained from the example image.





And the following outputted area : **46.42 cm²**