**BMEN5322 Project**

Segmentation using MATLAB is an essential technique in the medical image processing. This technique is widely used in the CT/MRI field for the clinical diagnostician of intracranial brain disease.

A set of MRI data, which comes from an open-source database with diagnostic of certain level of brain disease (such as traumatic brain injury (TBI) or brain tumor) is assigned. Pick up the data with the names matches the last digits of your student ID. E.g., if your ID is 1234561, then choose the data “01”.

Write your own code to process the MRI data based on the technique learnt. The ideal code should include 6 major steps listed below:

***1, Load the MRI data and address the data information:***

***Image FOV, TR, TE, data size in pixel, x-y-z direction voxel size.***

***2, Generate the correct Montage view of the MRI data.***

***3, Segment the brain tissue. Eliminate the skull and scalp. The remaining regions should include both normal and damaged tissues. Choose a certain slice to show your results.***

***4, Perform the contrast map of the segmented brain image from step 2. The damaged tissue and normal tissue should be imaged using different color.***

***5, Perform the contour view from step 3.***

Each student should submit a report including the MATLAB code and a brief descriptions & images to represent the 5 steps.