**BRAIN TUMOR CLASSIFICATION AND SEGMMENTATION Using CNN and RCNN Model on Brain MRI Data.**

**OBJECTIVE:**

Brain is one of the most complex organs in the human body that works with billions of cells. A brain tumor arise when there is uncontrolled division of cells forming an abnormal group of cells around or inside the brain. That group of cells can affect the normal functionality of the brain activity and destroy the healthy cells. Brain tumors classified to benign or low-grade (grade I and II) and malignant tumors or high-grade (grade III and IV). Its detection and classification is very difficult even for experts when tumor is on early stage. Our objective is to automate these task using highly precise state of art computational intelligence algorithms.

**PROPOSED METHODOLOGY:**

Our proposed methodology based on the CNN learning architecture for classification and and RCNN model for segmentation brain tumors in brain MRIs . Brain magnetic resonance imaging (MRI) imaging techniques will be used as it provides a lot of detail information about the brain structure and abnormalities within the brain tissues due to the high resolution of the images.

The proposed methodology for classifying the brain tumors in brain MRIs is as follows:

Step 1: Brain MRIs Dataset acquisition according to the World Health Organization (WHO) classification system

Step 2: Classification using CNN (Convolution Neural Network)

Step 3: Image segmentation using RCNN (Region-Convolution Neural Network)

**EVALUATION OF MODEL:**

The evaluation of the performance for the proposed methodology was measured in terms of average classification rate, average recall, average precision, average F-Measure and average area under the ROC curve (AUC)

**CONCLUSION:**

Automated approaches for brain tumors detection and type classification using brain MRI images since it became possible to scan and load medical images to the compute/cloud to get the most accurate results using CNN and RCNN model.