Brain Tumor Segmentation

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❖Problem Definition

At present, processing of medical images is a developing and important field. It includes many different types of imaging methods. Some of them are Computed Tomography scans (CT scans), X-rays and Magnetic Resonance Imaging (MRI) etc. These technologies allow us to detect even the smallest defects in the human body. Abnormal growth of tissues in the brain which affect proper brain functions is considered as a brain tumor. The main goal of medical image processing is to identify accurate and meaningful information using images with the minimum error possible. MRI is mainly used to get images of the human body and cancerous tissues because of its high resolution and better-quality images compared with other imaging technologies. Brain tumor identifications through MRI images is a difficult task because of the complexity of the brain. MRI images can be processed and the brain tumor can be segmented. These tumors can be segmented using various image segmentation techniques. The process of identifying brain tumors through MRI images can be categorized into four different sections; pre-processing, image segmentation, feature extraction and image classification.

❖Dataset

Kaggle Brain MRI Images for Brain Tumor

Link: https://www.kaggle.com/jjprotube/brain-mri-images-for-brain-tumor-detection

❖Methodology

According to the following steps, Brain tumors can be detected using Image Processing techniques.

1. **Input (MRI image)**
2. **Pre-Processing**
3. **Image Segmentation**
4. **Morphological Operation**
5. **Connected Components**
6. **Classification**

❖Related Work

Paper: Identification of Brain Tumor using Image Processing Techniques

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