A Comparative Study on Brain Tumor Detection Methods using MRI Scans

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Abstract: *A brain tumour is formed due to the overgrowth of abnormal cells inside the brain. There are several types of tumours that are broadly classified based on their cancerous properties as malignant tumours or cancerous tumours and benign tumours or non-cancerous tumours. They can either begin in the brain and be known as primary tumours or spread to the brain from another body part and be called metastatic. These tumour developments can be life-threatening if not detected and treated at an early stage. MRI or Magnetic Resonance Imaging Scans serve as the preliminary test to diagnose a tumour. Then, further analysis is done by the neurosurgeons for prescribed medical care and treatment in the future. About 40-50 thousand patients suffer from a brain tumour growth every year in India. Thus, it is crucial to enhance the efficiency of the health sector by automating tasks that require preliminary diagnosis to reduce the burden on doctors and provide critical patients with timely care and treatment. Hence, this project proposes to develop an algorithm to detect brain tumours from MRI Scans on MATLAB and also provides a comparison between the different models that can be implemented to perform this task. The proposed algorithms in this study reflect the importance of creating a system that directly detects tumours without the requirement of complex machine learning algorithms that require the use of training and testing data sets.*

Keywords: Tumour, MRI Scans, MATLAB, machine learning algorithms

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BIOGRAPHY

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