MRI-BASED BRAIN TUMOR CLASSIFICATION ON DEEP LEARNING USEING SGD ALGORITHM

A Project report submitted in partial fulfilment of the requirements for the award of degree

Of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMUNICATION ENGINEERING

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CERTIFICATE

This is to certify that the project entitled **"BRAIN TUMOR DETECTION & CLASSFICATION USING DEEP LEARNING ON MRI IMAGES"** in partial fulfilment for the of degree of Bachelor of technology in ELECTRONICS AND COMUNICATION ENGINEERING, at AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY, **MAKAVARAPALEM, VISAKHAPATNAM** is an bonified work carried out by P. BHANU PRASAD (21815A0405), V.POORNA SEKHAR (21815A0409), P.JAYANTH (21815A0416), S.VARSHINI (21815A0417), P. N. DURGA PRASAD (20811A0454)Under the guidance and supervision during 2023-2024.

PROJECT GUIDE

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ABSTRACT

A brain tumour is a cancerous (malignant) or non- cancerous (benign) abnormal growth of cells or mass in the brain. The identification of the tumour is done by magnetic resonance imaging (MRI). The timely detection of brain tumours plays a vital role as it can be life-threatening if left untreated. The traditional method of manually checking the MR image might not be very accurate since it is dependent on the skill of the person examining the images. To increase the efficiency and accuracy of diagnoses by the radiologists and neurologists, we propose a model which uses Convolutional Neural Networks (CNN) based on deep learning techniques to classify the common types of tumour. The dataset of 3264 and Real Time Images collected from several patients consists of MRI images of three different labelled brain tumours that are commonly found: Meningiomas, Gliomas and Pituitary Adenomas. The proposed model is first trained using a large number of labelled images and then the model classifies any given MRI image into one of the three above mentioned classes.

Keywords: MRI, CNN, Meningiomas, Gliomas and Pituitary Adenomas,

Data Set