

CLASSIFICATION OF BRAIN TUMOR ON BRAIN MRI IMAGES USING CONVOLUTIONAL NEURAL NETWORK METHOD

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ABSTRACT

Convolution Neural Network is one of the Machine Learning methods from the development of Multi Layer Peceptron (MLP) which is used to process two-dimensional data. CNN is included in the type of Deep Neural Network because it is at the network level and is widely implemented in image data. The medical world from year to year always develops in all aspects following technological developments. In the world of medicine, technological developments play a very important role in facilitating doctors in diagnosing patients' diseases. Brain tumors are tissue growths due to abnormal cells in the brain and around the brain. One of the examinations to diagnose brain tumors is to use digital images through Magnetic Resonance Imaging (MRI). MRI itself is a method to assist doctors in analyzing and classifying types of brain tumors. Because it is done manually and by naked eye by doctors and radiologists, analysis of MRI images is difficult to identify directly by doctors and radiologists because it will result in differences of opinion between them. This requires a system that can assist doctors in making decisions and identifying brain tumor diseases. The system was built using the Convolution Neural Network method in order to provide good and accurate classification results. From the research that has been done, researchers have succeeded in making a brain tumor classification system with an accuracy of 92.50%, precision of 98.11% and recall of 86.7%.

Keywords: Magnetic Resonance Imaging, CNN, Image, Multi Layer Peceptron, Deep Neural Network