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Brain Tumor Detection and Classification Using Convolutional Neural Network and Deep Neural Network

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Abstract



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For successful treatment of the disease, accurate and early detection of brain tumours is essential. Early detection not only helps to come up with better medications, it... **View more**

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Abstract:

For successful treatment of the disease, accurate and early detection of brain tumours is essential. Early detection not only helps to come up with better medications, it can also save a life in due time. Neuro-oncologists are benefiting in many ways by the advent of Computer-Aided Diagnosis and biomedical informatics. Machine learning algorithms are recently have been put to use for processing medical imagery and information in contrast to manual diagnosis of a tumour, which is a tiresome task and involves human error. Computer-aided mechanisms are applied to obtain better results as compared with manual traditional diagnosis practices. This is generally done by extracting features through a convolutional neural network (CNN) and then classifying using a fully connected network. The proposed work involves the approach of deep neural network and incorporates a CNN based model to classify the MRI as "TUMOUR DETECTED" or "TUMOUR NOT DETECTED". The model captures a mean accuracy score of 96.08% with fscore of 97.3.

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