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| Title | Multi-Modal Case Study on MRI Brain Tumor Detection Using Support Vector Machine, Random Forest, Decision Tree, K-Nearest Neighbor, Temporal Convolution & Transfer Learning | | |
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| Abstract |  |
| In the Medical field, Brain Tumor Detection has become critical and demanding task because of their several shapes, locations, and the intensity of image. That’s why an automated system is important to aid physicians and radiologists in detecting and classifying brain tumor. In this research, we have discussed different machine learning as well as deep learning algorithm which are mostly used for image classification. We have also compared different models that are being used for tumor classification based on machine learning and deep learning. MRI images of Glioma tumor, Pituitary tumor, Meningioma tumor are the base of this research, and we have compared different techniques along with the accuracy of different classification model using those MRI images. We have used different deep learning pre-trained model for training brain tumor images. Those pre-trained models have provided outstanding performance along with less power consumption and computational time. EfficientNet-B3 has provided the best accuracy of 98.16% among other models as well as traditional machine learning algorithms. The experimental result of this model is proven the best and most efficient for tumor detection and classification in comparison with other recent studies. | |