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Brain Tumor Detection Using Machine Learning

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Abstract: *Brain Tumor segmentation is one of the most crucial and arduous tasks in the field of medical image processing as a human-assisted manual classification can result in in-accurate prediction and diagnosis. Moreover, it becomes a tedious task when there is a large amount of data present to be processed manually. Brain tumors have diversified appearance and there is a similarity between tumor and normal tissues and thus the extraction of tumor regions from images becomes complicated. In this study, we performed pre-processing using the bilateral filter (BF) for removal of the noises that are present in an MR image. This was followed by the binary thresholding and Convolution Neural Network (CNN) segmentation techniques for reliable detection of the tumor region. Training, testing, and validation datasets are used. Based on our machine, we will predict whether the subject has a brain tumor or not. The resultant outcomes will be examined through various performance examined metrics that include accuracy, sensitivity, and specificity. It is desired that the proposed work would exhibit a more exceptional performance over its counterparts.*

Keywords: Brain tumor, Magnetic resonance imaging(MRI), Gaussian Filters, Convolution Neural Network.

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