

# Image Segmentation and Classification Using CNN Model to Detect Brain Tumors

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**Abstract**—Brain tumors are classified using a biopsy not typically done before a final brain surgery. Enhancing technology and machine learning may assist tumor diagnosis without invasive procedures. The CNN is a machine-learning method that has produced considerable success in picture segmentation and classification (CNN). We are presenting a brain tumor segmentation and classification architecture with three tumor modalities. The network created is simpler than current pretrained networks and has been tested using contrast-enhanced magnetic resonance images from T1. The capacity of the network to generalize has been evaluated using one of the 10 times, subject specific cross-validation techniques and tested by an enlarged picture database. The best result was achieved for the 10fold cross-validation technique for the record-oriented cross-validation of the increased data set, and the accuracy in this instance was 96.56 percent. The newly designed CNN architecture may be utilized as an effective decision support tool for radiologists in medical diagnosis with high generalization capacity and fast performance speed.

**Keywords**—Automatic image segmentation.(AIS) , MRI ,Computed tomography images(CTI) ,Convolutional neural network(CNN), Spine segmentation ,image segmentation. ,tumor.