

Brain Tumor Detection

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Abstract: *The project presents the MRI encephalon diagnosis support system for structure segmentation and its analysis utilizing K-denotes clustering technique integrated with Fuzzy C-designates algorithm. The method is proposed to segment mundane tissues such as White Matter, Gray Matter, Cerebrospinal Fluid and eccentric tissue like tumour apart from MR images automatically. These MR encephalon images are often corrupted with Intensity Inhomogeneity artefacts cause unwanted intensity variation due to non-uniformity in RF coils and noise due to thermal vibrations of electrons and ions and kineticism of objects during acquisition which may affect the performance of image processing techniques utilized for encephalon image analysis. Due to this type of artefacts and noises, sometimes one type of mundane tissue in MRI may be misclassified as other type of mundane tissue and it leads to error during diagnosis. The proposed method consists of pre-processing utilizing Gaussian filter to abstract noise and K-denotes clustering technique integrated with Fuzzy C-betokens algorithm segments mundane tissues by considering spatial information because neighbouring pixels are highly correlated and additionally construct initial membership matrix desultorily. The system additionally used to segment the tumour cells along with this morphological filtering will be acclimated to abstract background noises for smoothening of region. The project results will be presented as segmented tissues and relegation utilizing neural network classifier.*

Keywords: Numpy, Open-CV, Pillow, Tensorflow, Tumor Detection, Convolutional Neural Network, tkinter, Gaussian Filters, MRI Images, Brain

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