عنوان مقاله:

Brain tumor detection using Convolutional neural network

محل انتشار:

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خلاصه مقاله:

Medical image processing stands as a forefront innovation in today's research landscape, offering noninvasive solutions through technologies like PET and CT scans. The early identification of brain tumors via noninvasive methods like Magnetic Resonance Imaging (MRI) significantly improves treatment options and patient recovery chances. However, manually identifying tumors from numerous MRI images relies heavily on the time and expertise of medical professionals. To address this, computer-aided expert systems have gained traction, leveraging machine learning and deep learning frameworks for efficient brain tumor detection and diagnosis. This paper aims to devise a proficient framework using deep learning techniques for brain tumor segmentation and classification. The study utilizes a simple model for volumetric MRI image segmentation, followed by tumor classification using Convolutional Neural Networks (CNNs). This dataset comprises ۲۰۷۵ images divided into two categories: ۱۰۹۵ brain images depicting tumors and ۹۸۰ brain images without any tumors. The proposed model achieves an ۸۵% accuracy rate in recognizing brain tumor images.

کلمات کلیدی:

Brain tumor detection, Deep learning, Convolutional neural network, MRI