Detection of Brain Tumor Using U-Net Model Approach

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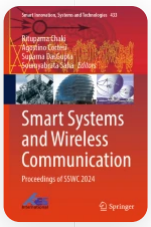

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Abstract

This study introduces an innovative deep learning methodology leveraging the U-Net framework for medical image segmentation and lesion detection in brain tumors. U-net

architecture contains encoder and decoder blocks which in turn are capable of capturing and propagation of information of the features. In this paper, for brain tumor segmentation, a U-Net Convolutional Neural Network (CNN) is employed, utilizing multimodal magnetic resonance imaging (MRI) data and skip connections for precise tumor localization and segmentation. Through comprehensive experiments, we show that our method outperforms traditional techniques and current CNN models for medical image segmentation and lesion detection in brain tumors. Moreover, the proposed method can perform the task with higher accuracy. This tailored U-Net architecture demonstrates the potential for advancing medical image analysis, enabling precise segmentation and lesion detection, ultimately leading to improved patient care and treatment outcomes.

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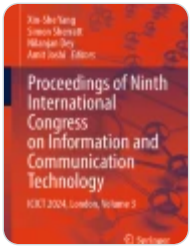

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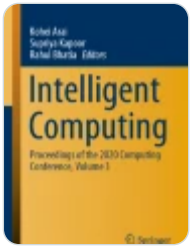

Analysis and Detection of Brain Tumor Using U-Net-Based Deep Learning

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