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Patent Search

Invention Title	ADVANCED IMAGING ANALYTICS: MACHINE LEARNING AND DEEP LEARNING IN CANCER DETECTION AND SEGMENTATION			
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Abstract:

The invention relates to a system and method for advanced imaging analytics utilizing machine learning (ML) and deep learning (DL) techniques to enhance the detection a segmentation of cancerous tissues in medical images. The system integrates multiple imaging modalities, such as MRI, CT, and PET, and employs sophisticated neural netw including convolutional neural networks (CNNs), for precise analysis. Key components include modules for data acquisition, preprocessing, cancer detection, segmentation post-processing, as well as a user-friendly graphical interface for clinical interaction. The system aims to improve diagnostic accuracy and efficiency, reduce the burden on radiologists, and enable real-time surgical assistance and personalized treatment planning, ultimately enhancing patient care and treatment outcomes.

Complete Specification

Description: The present invention relates to the field of medical imaging and diagnostics, particularly the application of machine learning (ML) and deep learning (DL) techniques in the detection and segmentation of cancerous tissues in medical images. This invention leverages advanced ML and DL algorithms to improve the accuracy, efficiency, and reliability of cancer detection and segmentation, utilizing various imaging modalities such as magnetic resonance imaging (MRI), computed tomography (C and positron emission tomography (PET).

BACKGROUND OF THE INVENTION

The following description of related art is intended to provide background information pertaining to the field of the disclosure. This section may include certain aspects c the art that may be related to various features of the present disclosure. However, it should be appreciated that this section be used only to enhance the understanding the reader with respect to the present disclosure, and not as admissions of prior art.

Early and accurate detection of cancer is critical for effective treatment and improved patient outcomes. Traditional imaging methods, such as MRI, CT, and PET, are commonly used to identify and diagnose cancer. However, these methods rely heavily on the manual interpretation of images by radiologists, which can be time-consum and prone to variability and human error. The increasing complexity and volume of medical imaging data have amplified the need for automated, precise, and efficient diagnostic tools.

Recent advancements in machine learning (ML) and deen learning (DL) have shown significant promise in various fields including medical imaging ML and DL algorithm

View Application Status



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