

Advanced Neural Network Algorithms for Medical Imaging Cancer Diagnosis Optimization Using Deep Learning

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Abstract:

Accurate and timely cancer diagnosis is crucial for effective treatment planning and improved patient outcomes. This study investigates the application of advanced neural network algorithms to optimize cancer detection in medical imaging using deep learning techniques. Convolutional neural networks (CNNs) and hybrid deep learning architectures are employed to enhance feature extraction and classification accuracy in various imaging modalities, including MRI, CT, and histopathological images. The proposed models are trained on annotated medical datasets to identify malignant patterns with high sensitivity and specificity. The framework integrates automated feature selection and image preprocessing for enhanced diagnostic performance. Experimental results validate the system's effectiveness in reducing diagnostic errors and supporting clinical decision-making in oncology.

Keywords:

Cancer diagnosis, medical imaging, deep learning, neural networks, CNN, diagnostic optimization.

REQUEST FOR FULL TEXT

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