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Altri autori (Persone)	RaviVinayakumar SinghPrabhishek PhamHoang
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Soggetti	Medical physics Machine learning Algorithms Medical care Industrial engineering Production engineering Operations research Medical Physics Machine Learning Health Care Industrial and Production Engineering Operations Research and Decision Theory
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Nota di contenuto	Enhancing dysarthric speech for improved clinical communication: A deep learning approach -- Speech-based real-world scene understanding for assistive care of the visually impaired -- Medical image segmentation with deep learning: An overview -- Lightweight generative model for synthetic biomedical images with enhanced quality -- Pediatric dental disease detection using X-ray image enhancements and deep learning algorithms -- Evaluation of Parkinson disease from MRI images using deep learning techniques -- Analyzing

the effect of eyes open and eyes closed states on EEG in Parkinson's disease with ON and OFF medication -- Automated detection of diabetic retinopathy using ResNet-50 deep learning model -- Deep learning model for decoding subcortical brain activity from simultaneous EEG-FMRI multi-model data -- Secure transmission of medical images in IoMT for smart cities using data hiding scheme -- Deep learning approaches to heart stroke prediction: Model evaluation and insights -- Harnessing predictive modeling techniques for early detection and management of diseases: Challenges, innovations, and future directions -- Fundamentals of machine learning and deep learning for healthcare applications -- Automatic detection of Parkinson disease through various machine learning models -- Transforming healthcare: The role of AI and ML in disease prediction, treatment, and patient satisfaction -- Multi-modality medical (CT, MRI, ultrasound etc.) Image fusion using machine learning/deep learning -- Leveraging digital devices for objective behavioral health assessment: Computational machine learning methods for sleep and mental health evaluation -- Optimizing medical image quality through hybrid machine learning techniques and convolutional denoising autoencoders -- Image segmentation in multimodal medical imaging using deep learning models -- Brain MRI analysis for multiple sclerosis detection using deep learning techniques.

Sommario/riassunto

This book explains medical image processing and analysis using deep learning algorithms to analyze medical data. It focuses on the latest achievements and developments in applying this analysis to medical imaging, clinical, and other healthcare applications. The book covers among other areas: Image acquisition and formation. Computer-aided diagnosis. Image classification. Feature extraction. Image enhancement/segmentation. Medical image processing issues such as segmentation, visualization, registration, and navigation may seem to be distinct, yet they are all intertwined in the process of resolving clinical bottlenecks. Using deep learning algorithms, researchers were able to achieve record-breaking performance and set the bar for future research. Due to the extensive quantity of medical imaging data of CT scan, ultrasound, and MRI, there is widespread use of machine learning, specifically deep learning, to discover specific patterns on such data. Such large data is well quantified by deep learning models. Deep learning is now being utilized, customized, and particularly developed for medical image analysis, as opposed to when it was first introduced to the community. Having learned more about the techniques, researchers have come up with innovative ideas for combining artificial intelligence (AI) with neural networks to solve difficult issues like medical image reconstruction. The key features of this book are: Machine learning and deep learning applications. Medical imaging applications. Feature extraction and analysis. Medical image classification, segmentation, recognition, and registration. Medical image analysis and enhancement. <Handling medical image dataset.