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Special Issue Reprint

Artificial Intelligence in Image-Based Screening, Diagnostics, and Clinical Care of Cardiopulmonary Diseases

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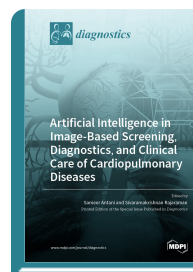
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ISBN 978-3-0365-6434-0 (Hardback)

ISBN 978-3-0365-6435-7 (PDF)



Cardiothoracic and pulmonary diseases are a significant cause of mortality and morbidity worldwide. The COVID-19 pandemic has highlighted the lack of access to clinical care, the overburdened medical system, and the potential of artificial intelligence (AI) in improving medicine. There are a variety of diseases affecting the cardiopulmonary system including lung cancers, heart disease, tuberculosis (TB), etc., in addition to COVID-19-related diseases. Screening, diagnosis, and management of cardiopulmonary diseases has become difficult owing to the limited availability of diagnostic tools and experts, particularly in resource-limited regions. Early screening, accurate diagnosis and staging of these diseases could play a crucial role in treatment and care, and potentially aid in reducing mortality. Radiographic imaging methods such as computed tomography (CT), chest X-rays (CXRs), and echo ultrasound (US) are widely used in screening and diagnosis. Research on using image-based AI and machine learning (ML) methods can help in rapid assessment, serve as surrogates for expert assessment, and reduce variability in human performance. In this Special Issue, “Artificial Intelligence in Image-Based Screening, Diagnostics, and Clinical Care of Cardiopulmonary Diseases”, we have highlighted exemplary primary research studies and literature reviews focusing on novel AI/ML methods and their application in image-based screening, diagnosis, and clinical management of cardiopulmonary diseases. We hope that these articles will help establish the advancements in AI.



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