

Artificial intelligence (AI) is a branch of computer science devoted to the performance of tasks that normally require human intelligence. AI technology is innovating society as a whole, and the medical field will not be an exception. In the health care field, numerous efforts are being made to implement the AI technology for practical medical treatments. A major subbranch is machine learning where computers learn how to perform tasks by analyzing data without requiring specific human programming instructions. That is, the computer generates its own decision-making algorithm.

With the rapid developments in machine learning algorithms and improvements in hardware performances, the AI technology is expected to play an important role in effectively analyzing and utilizing extensive amounts of health and medical data. However, the safe and effective application of medical AI technology are only possible through convergence and cooperation in various fields such as medicine, engineering, industry, and social philosophy. It is also very important to prepare for the education of current and future medical personnel who will use the developed medical AI.

This book, AI in thoracic disease, consists of four sections. The first is overview of AI in thoracic disease such as lung cancer, COVID-19, valvular heart disease and sleep medicine. The second and third sections are pathologic and imaging diagnosis of AI, where deep learning technology is actively used. The last section contains treatment and prognosis of AI including clinical decision-support system with multidisciplinary approach in patients with lung cancer.

It is my great honor and pleasure to provide the preface to this textbook, which is the result of the effective cooperation between colleagues, with a marked interest in this specific subject, and the AME Publishing team, which have taken care of the editing process. Hopefully this text may serve as a benchmark to your future studies and enjoy the interesting reading!



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