



Book

# Machine Learning and Deep Learning in Medical Data Analytics and Healthcare Applications

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Edition	1st Edition
First Published	2022
eBook Published	25 February 2022
Pub. Location	Boca Raton
Imprint	CRC Press
DOI	<a href="https://doi.org/10.1201/9781003226147">https://doi.org/10.1201/9781003226147</a>
Pages	292
eBook ISBN	9781003226147
Subjects	Bioscience, Computer Science, Economics, Finance, Business & Industry, Engineering & Technology, Health and Social Care

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Citation

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## ABSTRACT

*Machine Learning and Deep Learning in Medical Data Analytics and Healthcare Applications* introduces and explores a variety of schemes designed to empower, enhance, and represent multi-institutional and multi-disciplinary machine learning (ML) and deep learning (DL) research in healthcare paradigms. Serving as a unique compendium of existing and emerging ML/DL paradigms for the healthcare sector, this book demonstrates the depth, breadth, complexity, and diversity of this multi-disciplinary area. It provides a comprehensive overview of ML/DL algorithms and explores the related use cases in enterprises such as computer-aided medical diagnostics, drug discovery and development, medical imaging, automation, robotic surgery, electronic smart records creation, outbreak prediction, medical image analysis, and radiation treatments.

This book aims to endow different communities with the innovative advances in theory, analytical results, case studies, numerical simulation, modeling, and computational structuring in the field of ML/DL models for healthcare applications. It will reveal different dimensions of ML/DL applications and will illustrate their use in the solution of assorted real-world biomedical and healthcare problems.

### Features:

- Covers the fundamentals of ML and DL in the context of healthcare applications
- Discusses various data collection approaches from various sources and how to use them in ML/DL models
- Integrates several aspects of AI-based computational intelligence such as ML and DL from diversified perspectives which describe recent research trends and advanced topics in the field
- Explores the current and future impacts of pandemics and risk mitigation in healthcare with advanced analytics
- Emphasizes feature selection as an important step in any accurate model simulation where ML/DL methods are used to help train the system and extract the positive solution implicitly

This book is a valuable source of information for researchers, scientists, healthcare professionals, programmers, and graduate-level students interested in understanding the applications of ML/DL in healthcare scenarios.

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