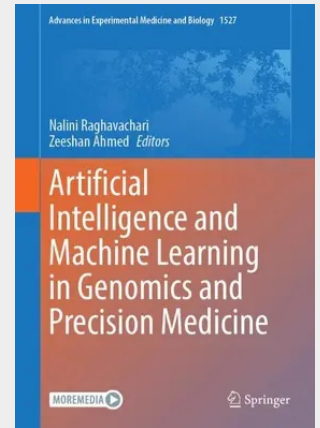


Artificial Intelligence and Machine Learning in Genomics and Precision Medicine

This book explores how Artificial Intelligence/Machine Learning (AI/ML) is transforming the future of healthcare by enabling personalized, data-driven treatments tailored to individual patients. From genomics and drug discovery to diagnostics and treatment optimization, this book highlights how AI is not only improving patient outcomes but also reshaping how we understand underlying biology of health and disease at a fundamental level. This book provides a comprehensive look at AI's role in personalizing medical treatments, improving patient outcomes, and transforming the practice of medicine by making it more data-driven and individualized. Through a combination of case studies, expert insights, and a deep dive into the underlying technologies, chapters explore how AI has been implemented in genomics and precision health settings to date and ways it may be applied in the near future, including for multi-modal diagnostics and translational genomics research, while considering the potential benefits and challenges related to data harmonization and security, workforce, and usefulness for all. The accuracy of, and bias inherent to, AI technologies and their potential impacts on AI applications in genomics-related research and clinical care are also evaluated, along with lessons learned from applications of AI in other fields that may be transferable to genomics and precision health throughout the translational research process. This book is designed for healthcare professionals, researchers, and students eager to understand the dynamic intersection between AI and precision medicine.

This book explores how Artificial Intelligence/Machine Learning (AI/ML) is transforming the future of healthcare by enabling personalized, data-driven treatments tailored to individual patients. From genomics and drug discovery to diagnostics and treatment optimization, this book highlights how AI is not only improving patient outcomes but also reshaping how we understand underlying biology of health and disease at a fundamental level. This book provides a comprehensive look at AI's role in personalizing medical treatments, improving patient outcomes, and transforming the practice of medicine by making it more data-driven and individualized. Through a combination of case studies, expert insights, and a deep dive into the underlying technologies, chapters explore how AI has been implemented in genomics and precision health settings to date and ways it may be applied in the near future, including for multi-modal diagnostics and translational genomics research, while considering the potential benefits and challenges related to data harmonization and security, workforce, and usefulness for all. The accuracy of, and bias inherent to, AI technologies and their potential impacts on AI applications in genomics-related research and clinical care are also evaluated, along with lessons learned from applications of AI in other fields that may be transferable to genomics and precision health throughout the translational research process. This book is designed for healthcare professionals, researchers, and students eager to understand the dynamic intersection between AI and precision medicine.



235,39 €

219,99 € (zzgl. MwSt.)

vorbestellbar, Erscheinungstermin ca.
Februar 2027

Artikelnummer: 9783032412751

Medium: Buch

ISBN: 978-3-032-41275-1

Verlag: Springer

Erscheinungstermin: 08.02.2027

Sprache(n): Englisch

Auflage: Erscheinungsjahr 2027

Serie: Advances in Experimental
Medicine and Biology

Produktform: Gebunden

Format (B x H): 178 x 254 mm

