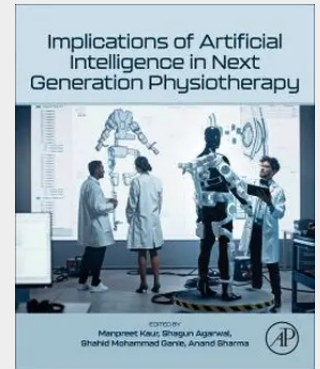


Implications of Artificial Intelligence in Next Generation Physiotherapy

Implications of Artificial Intelligence in Next Generation Physiotherapy explores how artificial intelligence is transforming the future of physiotherapy across the entire continuum of rehabilitation. Covering musculoskeletal, neurological, cardiopulmonary, sports, paediatric, geriatric, women's health, and community-based physiotherapy, the book highlights how AI is reshaping clinical practice through intelligent assessment, precision rehabilitation, personalized treatment planning, predictive analytics, remote monitoring, and data-driven clinical decision-making. The book presents comprehensive coverage of emerging AI technologies, including machine learning, deep learning, computer vision, wearable sensors, robotics, virtual and augmented reality, digital twins, tele-rehabilitation, and intelligent clinical decision support systems. It also discusses workload monitoring, movement analysis, biomechanical assessment, functional outcome prediction, patient engagement, and continuous recovery tracking, supported by current research, real-world applications, and clinical case studies. Designed for researchers, clinicians, educators, students, and healthcare innovators, this book bridges the gap between cutting-edge artificial intelligence and evidence-based physiotherapy practice. By examining both current applications and future directions, it provides readers with the knowledge required to implement AI-driven innovations that enhance diagnostic accuracy, optimize rehabilitation outcomes, improve healthcare accessibility, and advance patient-centred care in the next generation of physiotherapy.

Implications of Artificial Intelligence in Next Generation Physiotherapy explores the transformative integration of artificial intelligence into physiotherapy, a vital component of rehabilitation for musculoskeletal conditions, including chronic issues and sports injuries. Traditionally reliant on in-person sessions or passive guidance, physiotherapy is set for a revolution through AI technologies that enhance diagnostics, treatment planning, and personalized care, making therapy more accessible. The book covers topics such as workload monitoring, movement pattern detection, muscle imbalance identification, and recovery tracking, alongside next-generation methods and wearable technology. It provides a comprehensive resource for researchers, practitioners, and students, consolidating current research, case studies, and practical applications. By offering insights into how AI can tailor treatment plans and improve public health outcomes, this book equips the audience with essential knowledge to navigate the future of physiotherapy, ensuring they remain informed about advancements that can significantly enhance clinical outcomes and patient care.



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