

Multimodal AI in Healthcare

Fusion Intelligence for Advanced Health Diagnostics

This book is a unique guide that explores how multimodal AI is revolutionizing various domains of healthcare. It thoroughly discusses different data modalities—ranging from medical images and genomics to patient records—and techniques to combine diverse sources to create richer, more accurate insights.

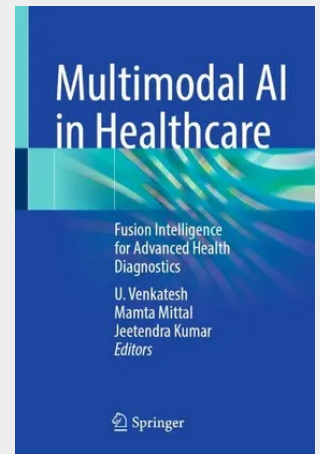
The book delves into the transformative role of Multimodal Artificial Intelligence (AI) in healthcare, covering diagnosis, treatment, and rehabilitation. It highlights advanced AI-driven diagnostic techniques, such as early cancer detection, AI in TB diagnostics, and precision diagnostics in clinical microbiology, showcasing AI's ability to enhance disease identification. Additionally, it examines AI's impact on critical and emergency care, with chapters on multimodal integration in stroke treatment, AI-driven systems in ICUs, pediatric emergency care, and AI applications in surgery and surgical healthcare.

A key focus is AI in primary and public healthcare, addressing its role in strengthening primary health systems, promoting health equity, and revolutionizing oral healthcare. The book also discusses the use of multimodal AI chatbots for medical laboratory result interpretation and AI's role in medical laboratory science and practice, emphasizing its potential to streamline diagnostic workflows.

Beyond traditional healthcare, the book explores AI's application in mental health and stress management, with insights into multimodal AI in suicide risk prediction and AI-driven music therapy for stress management. It also examines how AI is transforming surgery by enhancing precision, improving outcomes, and streamlining workflows, while emphasizing the irreplaceable role of human intuition, empathy, and patient-centered care.

This comprehensive guide not only illustrates how multimodal AI is transforming medical diagnostics and treatments but also paves the way for a future where precision health becomes the standard. It serves as an invaluable resource for students, scholars, and experts in the field, guiding healthcare professionals, researchers, and policymakers in leveraging multimodal AI to improve outcomes, reduce disparities, and create a smarter, patient-centric healthcare ecosystem.

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