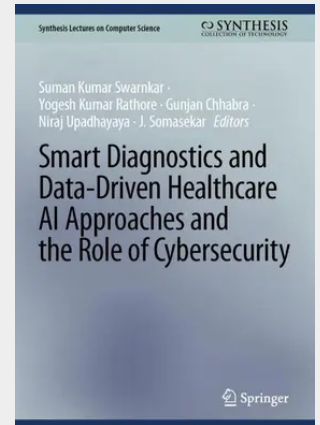


Smart Diagnostics and Data-Driven Healthcare AI Approaches and the Role of Cybersecurity

This book presents an accessible overview of how artificial intelligence (AI) is being used to transform diagnosis and treatment, while also highlighting the importance of building secure and trustworthy healthcare systems. In addition, the contributions explore the transformative impact of AI on medical diagnostics, clinical decision-making, and predictive analytics. With growing advancements in machine learning, deep learning, and clinical data analytics, smart diagnostics are becoming increasingly accurate, timely, and personalized. However, as AI systems rely heavily on sensitive patient data, concerns regarding data privacy, cybersecurity, and ethical usage are rising in parallel. These AI-powered tools support clinical decision-making, help reduce human error, and can lead to more personalized and effective treatment plans. However, to function effectively, these intelligent systems need access to massive amounts of sensitive health information, which is why cybersecurity becomes critical. This book brings together experts in AI, medicine, and cybersecurity to offer insights into how cutting-edge technologies can safely and ethically improve patient care. Current challenges in AI deployment in healthcare settings, including patient data protection, system vulnerabilities, and compliance with global data privacy regulations (e.g., HIPAA, GDPR) are addressed. Bridging medicine, technology, and digital ethics, this book offers valuable insights for researchers, clinicians, data scientists, and healthcare policymakers striving to build intelligent, secure, and future-ready healthcare systems. This book also aims to foster a deeper understanding of how intelligent, secure, and responsible AI applications can drive the future of healthcare delivery worldwide.>

Emphasizes smart diagnostics and clinical decision support systems, which are at the forefront of medical innovation Includes case studies and explores deployment challenges, cybersecurity incidents, and operational best practices Incorporates ethical/regulatory perspectives, privacy laws, bias mitigation, and societal impact of AI in healthcare

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