River Publishers

Generative AI in Neurodegenerative Disorders

Innovations, Views, and Obstacles

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This book delves into the transformative power of AI in the realm of neurodegenerative diseases, covering topics such as ALS, Huntington's, Parkinson's, and Alzheimer's. Generative AI provides new opportunities for early diagnosis, precise therapy, and individualized rehabilitation, which are crucial as these conditions remain major obstacles for healthcare providers and researchers.

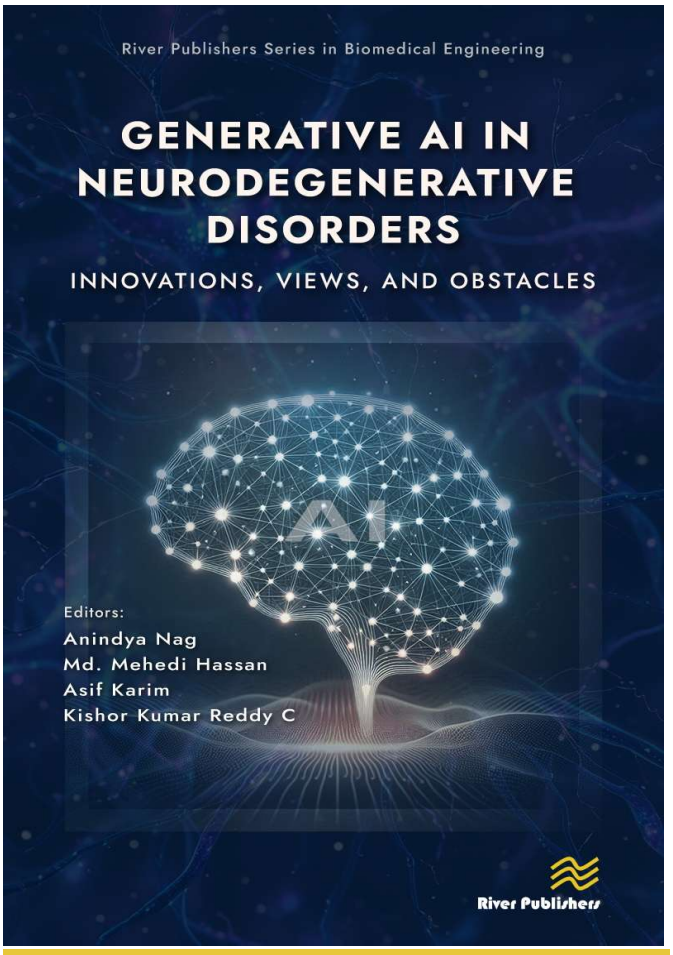
Researchers, physicians, AI developers, and healthcare professionals will find this book an invaluable resource for understanding how AI is influencing the development of treatments for neurodegenerative diseases. It describes important obstacles and future directions while providing insights into the newest breakthroughs, thus bridging the gap between technology and practical clinical applications. Anyone involved in neurodegenerative healthcare, from scientists conducting AI-driven medical research to physicians seeking to incorporate AI into patient care or AI professionals investigating new healthcare applications, will find the information and insights they need in this comprehensive book.

Predictive analytics, biomarker identification, and drug discovery are being transformed by AI-driven models, such as deep neural networks, generative adversarial networks (GANs), and variational autoencoders (VAEs). This book offers a comprehensive examination of these developments. Robots, wearable sensors, and cognitive therapy platforms are some of the AI-enhanced rehabilitation tools covered, as are AI-integrated cutting-edge technologies like fMRI and MRI, gene-editing methods like CRISPR, and more.

In addition to discussing recent technical developments, this book takes a close look at the data privacy, ethics, and regulatory issues that arise when using AI to study neurodegenerative disorders. Issues like algorithmic bias, model explainability, and fair AI-driven healthcare are thoroughly investigated in light of the growing usage of AI models in clinical decision-making, mental health applications, and cognitive rehabilitation.

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River Publishers Series in Biomedical Engineering

ISBN: 9788743801757
e-ISBN: 9788743801740
Available From: October 2025
Price: $ 150.00

KEYWORDS:
Neurodegenerative disorders, artificial intelligence, machine learning, generative AI, deep learning, neuroimaging, modern diagnosis

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