

Generative AI in Neurodegenerative Disorders

Innovations, Views, and Obstacles

Editors:

Anindya Nag, Northern University of Business and Technology Khulna, Bangladesh

Md. Mehedi Hassan, Khulna University, Bangladesh Asif Karim, Charles Darwin University, Australia Kishor Kumar Reddy C, Stanley College of Engineering and Technology for Women, India.

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.

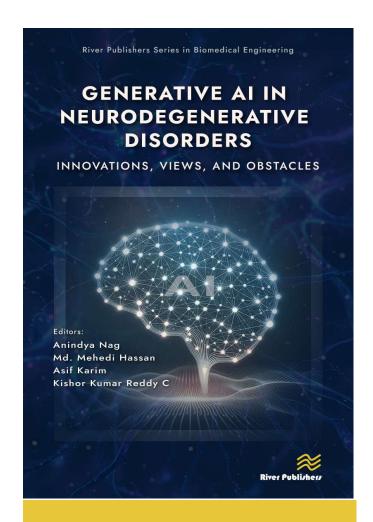
Researchers, physicians, AI developers, and healthcare professionals will find this book an invaluable resource for understanding how AI is influencing the development of treatments for neurodegenerative diseases. It describes important obstacles and future directions while providing insights into the 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 Al-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 Al-enhanced rehabilitation tools covered, as are Al-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.

TABLE OF CONTENTS

- Generative Al: A New Frontier in Understanding and Treating Neurodegenerative Diseases
- Generative Al-enhanced Diagnostic Systems: Revolutionizing Early Disease Detection through Advanced Predictive Analytics
- Obstacles and Opportunities: Generative AI in the Context of Neurodegenerative Disorders
- Generative Al in the Evolution of Gene Therapy: A Paradigm Shift in Genetic Engineering
- A Generative Predictive Model for Medical Data via PCA and Iterative K-means Fusion
- Exploring the Promises and Perils of Implementing Generative AI into Mental Health Care and Emotional Well-being Support of the General Public: A Comprehensive Overview
- Navigating Autism Spectrum Disorder: A Fusion of Deep Learning and Explainable AI for Enhanced Detection and Classification
- Generative Al-augmented Mental Health Support: The Impact of Generative Models on Therapeutic Practice
- Al and Neurodegenerative Disorders: From Early Diagnosis to Advanced Care
- Prediction of Alzheimer's and Parkinson's Diseases: Al Perspectives
- Advanced Fingerprint Authentication System and Neurodegenerative Disorder Multi-modal Pattern Recognition Techniques using Deep Learning
- Convolutional Neural Network-based Biomarkers for Alzheimer's Diagnosis and Prognosis
- Generative Al Novel Drug Discovery Avenues
- Al-driven Innovations: Revolutionizing the Management of Neurodegenerative Disorders
- Generative AI for Enhancing Cognitive Rehabilitation Patients with Neurodegenerative Disorders



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



www.riverpublishers.com marketing@riverpublishers.com