MACHINE LEARNING AND DEEP LEARNING IN SMART HEALTHCARE SYSTEMS AND IMPLANTABLE DEVICES

Chapter	Title	Page No.
1	Introduction to Machine Learning and Deep Learning for Intelligent Healthcare Applications	13
2	Data Acquisition and Preprocessing Techniques in AI-Based Biomedical Systems	44
3	AI-Driven Medical Decision Support Systems for Diagnosis and Prognosis Modeling	77
4	Machine Learning Algorithms for Real-Time ECG and EEG Signal Analysis in Wearable Devices	108
5	Deep Learning for Medical Imaging in Cardiovascular, Neurological, and Pulmonary Disease Diagnosis	139
6	AI-Powered Predictive Analytics for Chronic Disease Monitoring and Management	166
7	Anomaly Detection in Vital Sign Data Streams Using Deep Autoencoders and LSTM Models	192
8	AI-Enabled Adaptive Control Systems for Intelligent Pacemakers and Cardiac Rhythm Devices	221
9	Machine Learning-Based Tuning Algorithms for Neurostimulators and Deep Brain Implants	253
10	Edge AI for Energy-Efficient Data Processing in Implantable Bioelectronics	282
11	AI-Guided Biocompatibility and Lifetime Prediction in Implantable Sensors and Stimulators	312
12	IoT and Cloud Infrastructure for Remote Health Monitoring with AI-Based Decision Making	344
13	Federated Learning and Data Privacy in Connected Healthcare Devices	377
14	AI-Enhanced Secure Communication Protocols for Wearable and Implantable Medical Devices	411

15	Blockchain and AI Convergence in Electronic Health Record Sharing and Device Authentication	443