

# Contents

About the Editors . . . . .	iii
Preface . . . . .	v
Contents . . . . .	viii
Chapter 1: <b>Enabling Technologies of IoT on Health Care</b> . . . . .	1-27
Introduction . . . . .	2
Enabling technologies for IoT . . . . .	3
Sensor devices used in IoT networks to monitor the health-care . . . . .	5
Applications of IoT . . . . .	9
Personal Emergency Response System . . . . .	21
Conclusion . . . . .	23
Chapter 2: <b>The Role of AI and IoT in Seed Harvest and Agriculture Biotechnology</b> . . . . .	28-48
Precision Farming and Crop Management . . . . .	29
Case studies of AI-Driven Precision Farming in John Deere's . . . . .	31
Disease Detection . . . . .	39
Resource Management and Sustainability . . . . .	42
Conclusion . . . . .	45
Chapter 3: <b>Revolutionizing Care: The Role of Machine Learning in Modern Medicine</b> . . . . .	49-62
Introduction . . . . .	50
Wearable Sensors . . . . .	50
Remote patient Monitoring . . . . .	52
Robotic surgical system . . . . .	56
Diagnostic imaging system . . . . .	60

	Conclusion . . . . .	61
Chapter 4:	<a href="#">Smart Healthcare: Integrating Artificial Intelligence for Better Patient Outcomes</a> . . . . .	63-78
	Introduction . . . . .	64
	Genomics analysis . . . . .	65
	IOT Technology . . . . .	70
	Digital Pathology . . . . .	73
	Conclusion . . . . .	76
Chapter 5:	<a href="#">Adaptation of IOT and AI technologies in Detecting Viral Infections and Cardiovascular Diseases</a> . . . . .	79-99
	Introduction . . . . .	80
	SARS-CoV-2 Detection . . . . .	82
	HIV Detection . . . . .	85
	Influenza Detection . . . . .	89
	Comparative Analysis of IoT and AI Adaptations . . . . .	91
	Conclusion . . . . .	97
Chapter 6:	<a href="#">Predicting Hair Loss with AI: A Deep Learning Framework Combining Genetic and Scalp Health Data</a> . . . . .	100-107
	Introduction . . . . .	101
	Methodology . . . . .	102
	Result Analysis . . . . .	104
	Conclusion . . . . .	107
Chapter 7:	<a href="#">Smart Pill Detection Using Machine Learning Models</a> . . . . .	108-117
	Introduction . . . . .	109
	Methodology . . . . .	110
	Results . . . . .	113
	Conclusion . . . . .	116
Chapter 8:	<a href="#">Identifying Breast Cancer Using Machine Learning Algorithms</a> . . . . .	118-124
	Introduction . . . . .	119
	Literature Survey . . . . .	120
	Methodology . . . . .	121
	System Process . . . . .	122
	Conclusion . . . . .	123
Chapter 9:	<a href="#">Leveraging Machine Learning to Enhance Injury Prevention Strategies for Fast Bowlers</a> . . . . .	125-135

Introduction . . . . .	126
Methodology . . . . .	127
Preprocessing the Data . . . . .	131
Random Forest on Injury Analytics . . . . .	131
Random Forest on the Dataset . . . . .	132
Performance Evaluation . . . . .	134
Conclusion . . . . .	135
Chapter 10: <a href="#">Heart Disease Prediction using Machine Learning Algorithms</a> . . . . .	136-148
Introduction . . . . .	137
Objectives . . . . .	138
Literature Review . . . . .	138
Methodology . . . . .	144
Experimental Setup . . . . .	146
Results . . . . .	147
Conclusion . . . . .	147