

Contents

Preface — VII

Acknowledgments — IX

Short Biography of Editors — XIII

List of Contributors — XV

Rehab A. Rayan, Imran Zafar, Christos Tsagkaris

Deep learning for health and medicine — 1

Rohit Rastogi, Mamta Saxena, Sheelu Sagar, Neeti Tandon, T. Rajeshwari,
Priyanshi Garg

**Exploring Indian Yajna and mantra sciences for personalized health:
pandemic threats and possible cures in twenty-first-century healthcare — 17**

Bhanu Chander

**Advanced deep learning techniques and applications in healthcare
services — 37**

Rohit Rastogi, Mamta Saxena, Devendra Kr. Chaturvedi, Mayank Gupta,
Akshit Rajan Rastogi, Vrinda Kohli, Pradeep Kumar, Mohit Jain

**Visualizations of human bioelectricity with internal symptom captures:
the Indo-Vedic concepts on Healthcare 4.0 — 67**

Wasiur Rhmann, Babita Pandey

**Early cancer predictions using ensembles of machine learning and deep
learning — 91**

D. A Janeera, G. Jims John Wesley, P. Rajalakshmy, S. Shalini Packiam
Kamala, P. Subha Hency Jose, T. M. Yunushkhan

Deep learning in patient management and clinical decision making — 115

Neha Mehta, SVAV Prasad

Patient health record system — 141

S. Jaya, M. Latha

Prediction of multiclass cervical cancer using deep machine learning algorithms in healthcare services — 161

Sidharth Purohit, Shubhra Suman, Avinash Kumar, Sobhangi Sarkar,
Chittaranjan Pradhan, Jyotir Moy Chatterjee

Comparative analysis for detecting skin cancer using SGD-based optimizer on a CNN versus DCNN architecture and ResNet-50 versus AlexNet on Adam optimizer — 185

Mildred J. Nwonye, V. Lakshmi Narasimhan, Zablon A. Mbero

Coronary heart disease analysis using two deep learning algorithms, CNN and RNN, and their sensitivity analyses — 205

Ana Carolina Borges Monteiro, Reinaldo Padilha França, Rangel Arthur,
Yuzo Iano

An overview of the technological performance of deep learning in modern medicine — 225

Index — 245