

Contents

List of contributors — VII

M. Chitra, V. Tejasri, K. Balachandar, Mohit Tiwari,
and Manas Ranjan Mohapatra

Deep learning in computer vision — 1

Arthy M., Mercy Theresa M., B. Yasotha, S. Kavitha,
and Dhandapani Samiappan

Deep learning for medical image segmentation — 51

C. Thangamani, Revathi S., Anand M., Anantha Murthy,
and S. Praveena

Deep learning for image segmentation — 107

Revathi S., Subhashini S., Brindha Merin, R. Akila, and S. Shanthini

Machine learning algorithm for medical image processing — 155

Finney Daniel Shadrach, Shadrach, Cowsigan S.P., L. Ganesh Babu, and K. Kalpana

Machine learning models for predicting anomaly in scanned images — 215

Mangala Shetty, S. Praveena, V. Manivelmuralidaran, Spoorthi B. Shetty, Anupriya R.,
and P. Senthilkumar

**Advanced machine learning models for accurate and efficient anomaly
detection in scanned visual data — 263**

P. Krishnamoorthy, V.R. Kavitha, A. Aalan Babu, D. Shobana,
and G. Kumaran

**AI-enhanced diagnostic materials improving sensitivity for disease detection
and diagnostics — 311**

K. Dhanasekaran, Monelli Ayyavaraiah, Anand M., Mohit Tiwari, J. Vinisha,
and S. Praveena

**Machine learning approaches for optimizing the synthesis and
functionalization of quantum dots for medical imaging — 353**

Mangala Shetty, A. Balamurugan, V.S. Nishok, Venkatesan Hariram,
and Lakshmanan S.A.

Machine learning application in tissue engineering: scaffold design — 407

D.M. Gokul Varshan, Savita Verma, Swati Mutha, P. Balaji,
and Anand M.

**Machine learning approaches to improve electrospun nanofibers'
performance and properties for medical applications — 441**

D.M. Gokul Varshan, A. Sakira Parveen, J. Indra, Goutam Kumar Mahato,
and S.P. Sundar Singh Sivam

**Predictive machine learning models for assessing the long-term stability
of biodegradable scaffolds — 483**

M. Jawahar, Sanjay Sharma, M. Chrispin Das, Venkatesan Hariram,
and S.P. Sundar Singh Sivam

Customization of medical implants using 3D printing — 523

Index — 559