



River Publishers Series in Automation, Control and Robotics

IoT-enabled Convolutional Neural Networks

Techniques and Applications

Editors:

Mohd Naved

V. Ajantha Devi

Loveleen Gaur

Ahmed A. Elngar



River Publishers



IoT-enabled Convolutional Neural Networks: Techniques and Applications

Editors

Mohd Naved

Amity International Business School (AIBS), Amity University, Noida,
India

V. Ajantha Devi

Research Head, AP3 Solutions, Chennai,
TN, India

Loveleen Gaur

Amity International Business School (AIBS), Amity University, Noida,
India

Ahmed A. Elngar

Faculty of Computer and Artificial Intelligence, Beni-Suef University,
Egypt



Classification of Myocardial Infarction in ECG Signals Using Enhanced Deep Neural Network Technique

K. Manimekalai¹ and A. Kavitha²

¹Department of Computer Applications,
Sri GVG Visalakshi College for Women, India

²Department of Computer Science,
Kongunadu Arts and Science College, India
E-mail: gvgmanimekalai@gmail.com; manimekalai@gvgvc.ac.in;
akavitha_cs@kongunaducollege.ac.in

Abstract

The categorization of ECG signals is critical in therapeutic treatment. Traditional approaches have hit their performance ceiling, yet there is always room for improvement. The objective of this research is to use ECG signals to accurately locate and identify myocardial infarction (MI). In the proposed algorithm enhanced deep neural network (EDN), deep learning methods like convolutional neural network (CNN) and long short-term memory (LSTM) algorithms were applied. Vector operations such as matrix multiplication and gradient descent were conducted in parallel with GPU support on large matrices of data. Parallelism in EDN decreases the time it takes for a procedure to run. For the PTB database, the proposed model EDN has a higher accuracy of 87.80% according to the confusion matrices of the algorithms. Based on criteria such as precision, recall, *F1* measure, and Cohen kappa coefficient, the suggested model demonstrates performance improvisation. These enhancements to EDN's performance would aid in the saving of human lives.



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>