CALL FOR BOOK CHAPTER

Machine Learning Models and Architectures for Biomedical Signal Processing

ELSEVIER

ELSEVIER

Book Editors
(No Processing Charges)

Dr Suman Lata Tripathi
Professor, School of Electronics and Electrical Engineering, Lovely Professional University University, Phagwara, Punjab, India

Dr Valentina E. Balas
Full Professor, Department of Automatics and Applied Software at the Faculty of Engineering, "Aurel Vlaicu" University of Arad, Romania.

Dr Mufti Mahmud
Associate Professor
Department of Computer Science and Engineering, Nottingham Trent University (NTU), UK

Dr Soumya Banerjee
Trasna Solutions Ltd-europe , INRIA Paris and Mext Metaverse Paris, France

Chapter submission link:
tripathisumanlata78@gmail.com
Note: Female participation from different geographic region will be encouraged

Signal processing in the form text, image or video needs large data computational operations at desired data rate and accuracy. Large data requires more use of IC area with embedded bulk memories that further lead to more IC area. Trade-offs between power consumption, delay and IC area are always a concern of designers and researchers. Many real-time applications like processing of biomedical data in healthcare, smart transportation, satellite image analysis, IoT enabled systems to have still a lot of scope for improvements in terms of accuracy, speed, computational powers and overall power consumption. The current proposal deals with efficient machine and deep learning models and architecture design for biomedical signal processing.

Table of content (Each subsection is an individual chapter**)**

Section 1: Introduction to biomedical informatics

1.1 Recent trends of biomedical informatics

1.2 Biomedical data acquisition system

1.3 Biomedical signal processing techniques

Section 2: Machine learning models for biomedical signal processing

2.1 Machine learning models for audio processing

2.2 Machine learning models for text and image processing

2.3 Real-time examples of biomedical applications with MATLAB or Python software

2.4 Case studies for biomedical signal processing

Section3: Brain computer interfaces (BCI)

3.1 Brain computer interfaces for motor disorder

3.2 Brain computer interfaces elderly and disabled person

3.3 Brain computer interfaces for Cognitive-state of workload

3.4 Web based BCI interfaces

3.5 Case studies: Brain signal & data processing

Section 4: Real time architecture design for biomedical signals

4.1 Machine learning model implementations with FPGAs

4.2 Signal processing models and architectures for real time signal processing

4.3 Hardware accelerators for implementations of real-time systems

4.4 Application specific integrated circuit (ASIC) design for biomedical signals

4.5 Programming techniques for reconfigurable architectures

Section 5: Software and Hardware based Applications for biomedical informatics

5.1 Software applications for biomedical informatics

5.2 Smart biomedical devices

5.3 Security modules for biomedical signal processing

5.4 Assistive computational techniques for Telemedicine.

Chapter Submission Timeline
Last date for abstract submission: 6th April 2023
Last date for chapter submission: 15th May 2023
Last date Final submission after review: 10th June 2023