

Call for Chapters for the book: Signal Processing Techniques for Computational Health Informatics

Editors:

Md Atiqur Rahman Ahad, PhD, SMIEEE

Professor, University of Dhaka | Specially Appointed Assoc. Professor, Osaka University
<http://AhadVisionLab.com>

Mosabber Uddin Ahmed, PhD

Associate Professor, University of Dhaka

Contact [please make the email's subject as: "SPT book: ..."]:

atiqahad@du.ac.bd

mosabber.ahmed@du.ac.bd

Introduction:

Selected papers from **8th ICEV & 3rd IVPR** will be invited for Book Chapter: <http://cennser.org/ICIEV>

Computational health informatics is the interdisciplinary study of the design, development, adoption, and application of information and technology-based innovations specifically computational techniques that are relevant in healthcare and often used to describe full range of application and research topics for which biomedical informatics is the pertinent underlying scientific discipline. Given the multitude of techniques and methods used in the field of signal processing, a comprehensive and representative amount of signal processing techniques used in biomedical applications are presented in this book.

This includes bio-signal origin and dynamics, sensors used for data acquisition, artefact and noise removal techniques, biomedical signal and systems modelling, feature extraction techniques in time, frequency, time-frequency and complexity domain and image processing techniques in different image modalities like PET, MRI, medical ultrasound, X-ray, Computed Tomography (CT), etc. Moreover, a comprehensive overview of the security and privacy challenges, opportunities and future directions for computational health informatics in the big data age has been discussed by incorporating recent techniques from the area of artificial intelligence, deep learning and Human-Computer Interaction. We hope that the systematic analysis of the state-of-the-art techniques covered in this book will help to further our understandings of the physiological processes and increase our capability in medical diagnosis and prognosis.

Keywords: Health informatics, Computational Health Informatics, Biomedical signal, Signal processing, frequency-domain, time-domain, Complexity issues, image modalities, AI, IoT, HCI, Deep Learning, Big data

Submission date:

Chapter proposal as extended abstract : 30 June 2019

Full chapter in 15~20 pages : 30 August 2019

Revision (after having comments) : 30 September 2019

Publication : 30 November 2019

Table of Contents (*tentative* – so you are welcome to *propose* a chapter)

1. Introduction
2. Biomedical signal origin and dynamics
3. Sensors used for signal acquisition
4. Signal artefacts and techniques for artefacts and noise removal
5. Modelling of biomedical signals and systems
6. Time domain analysis in Health Informatics
7. Frequency domain analysis in Health Informatics
8. Time-frequency domain analysis in Health Informatics
9. Complexity analysis in Health Informatics
10. Image processing in Health Informatics
11. Different image modalities in Health Informatics
12. Artificial Intelligence in Health Informatics
13. Deep learning in Health Informatics
14. Big data analysis in Health Informatics
15. Privacy and Security: Challenges and Opportunities in Health informatics
16. Human-Computer Interaction (HCI): Applications in Health informatics
17. Informatics in Active and Healthy Ageing (HA)
18. Others – any proposal from you related to the theme of the book