

CALL FOR BOOK CHAPTERS

INTELLIGENT HEALTHCARE SYSTEMS

Keywords: Health 4.0, Internet of Medical Things, Public Health, Disaster Mitigation, Vehicular Communications, Wireless Networks, Wearables, Artificial Intelligence in Healthcare, Cyber-Physical Systems, Smart Designs, Blockchain, Digital Twins, Telemedicine, 5G, Medical Imaging, Cloud Computing.

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Book Content Description

Information is paramount to the healthcare sector, entailing intense data, medical epidemiologic sets, Internet browsing records, surveys, complex engineering models, and so on via the Cloud. This quest for knowledge prompts the data dimensionality, which calls for more sophisticated and efficient information strategies. Health science and biology are very complex fields fully embedded in information technology, but the associated processes are much too intricate to be faithfully modeled. It is not easy to extract knowledge starting from raw data, and it is also expensive.

Artificial intelligence (AI) in healthcare (AIH) has been the primary concern to develop expert systems aimed for diagnostic and decision-making in knowledge acquisition, representation, reasoning, and explanation.

Many healthcare facilities (HFs) have data acquisition, monitoring, and storage systems integrated into larger-scale information systems. This vast amount of information and databases stemming from medical applications cause hinder analysis and decision making. Hence, there is a need to develop better tools for accessing/storing/analyzing knowledge while effectively using multimodal data. These necessities become essential in the healthcare realm as decision-making relies on knowledge from multidisciplinary areas. This book intends to provide computational methods for intelligent health data analysis to narrow the gap between data gathering and data comprehension with applications in medicine, health care, biology, pharmacology, and related areas.

Intelligent Data Analysis (IDA) expedites healthcare analyses and applications. IDA employs specialized statistical, pattern recognition, machine learning (ML), data abstraction, and visualization tools for analysis of data and discovery of mechanisms that created them. Healthcare data typically involve many records/variables, subtle interactions between entities, or a combination of all factors. Engineering, computing science, and ML empower data analysis tasks. The IDA extracts knowledge from too much data, with a vast amount of variables, data that represents very complex, nonlinear, real-life problems. IDA can help raw data analysis, coping with prediction tasks without knowing the theoretical description of the underlying process, classification tasks of new events, or modeling unknown processes. Classification, prediction, and modeling are the cornerstones brought in by IDA.

This book focuses on AIH methods and tools to bridge data gathering and data comprehension. Emphasis will also be given to problem solving within HFs to handle patient records, data warehousing, intelligent alarming, competent monitoring, etc. In medicine, overcoming this gap is particularly crucial since medical decision-making needs comprehension of healthcare data regularities and trends. This book tackles different IDA approaches.

Submission Schedule

One-page abstract submission: April 30, 2021

Manuscript submission due: May 31, 2021

Review notification with acceptance/rejection: June 30, 2021

Revised paper submission: July 31, 2021

Camera-Ready Submission: August 31, 2021

Submission Guidelines:

Submitted papers should present original, unpublished work, relevant to one of the topics of this book. All texts must have a docx and a pdf file according to the Taylor & Francis/ CRC Press guidelines. Figures must be black and white.

All submitted papers will be evaluated based on relevance, contribution significance, technical quality, and quality of presentation, by at least 3 independent reviewers.