A medium to disseminate novel experimental and theoretical research results in the field of biomedicine, biology, clinical, rehabilitation engineering, medical image processing, biocomputing, D2H2, and other health related areas.

Call for Papers

SPECIAL ISSUE ON

EMERGING CHALLENGES AND ADVANCEMENTS IN HEALTH INFORMATICS WITH NEW GENERATION UNSUPERVISED LEARNING

Artificial Intelligence (AI) is a highly effective method for fighting the pandemic COVID-19. AI can be described as Machine Learning (ML), Natural Language Processing (NLP), and Computer Vision applications for present purposes to teach computers to use large data-based models for pattern recognition, description, and prediction. Such functions can help identify (diagnosing), forecasting, and describing (treating) infections and aiding in controlling socio-economic impacts. The risk of the pandemic in terms of life and economic loss would be terrible; much confusion engulfed predictions of how bad and how effective non-pharmaceutical and pharmaceutical solutions would be. A worthy goal is to strengthen AI, one of the most popular data analytics tools developed in the past decade or so, to help reduce these uncertainties. Data scientists have been willing to take up the opportunity. In AI, machine learning and its subset (Deep Learning) methods are employed in various applications to solve multiple problems that occur due to uncertainty. But these problems were solved with the help of data collected from the history of occurrences of the event. Most machine learning and deep learning algorithms are trained to address the supervised learning problem, where the algorithms know the prediction requirement.

On the other hand, the clustering methods of data mining algorithms can group unknown data into structures. Based on knowledge discovery, this method finds a way to cluster the data without supervision. Most of these algorithms use distant metrics to complete the process. Combining the operation of machine learning and the clustering algorithms may also be the solutions to the problem. The benefits of Unsupervised learning that push us towards in-depth research is its ability to tackle the challenges that humans might find impossible either due to limited capacity or a bias. An idea of exploring raw and
unknown data does not necessarily know the health analyst is working to recover. This behavior is beneficial when it comes to segmenting patients. It can easily separate data into groups without any form of bias that might hinder a human due to pre-existing knowledge about the nature of the data on the customers. Also, it comes closer to human cognitive functions as just like a human brain; it deduces patterns from around the world and slowly learns more about the world over time. Even though the unsupervised learning methodology has an enormous potential to unravel the possibilities of next-generation AI in health informatics, it has few implementation hurdles.

The focus of this special issue is to provide a platform and opportunity for the researchers to find the solution for the current pandemic and future hazards. This special issue addresses the emerging challenges and advancements in health informatics based on the next generation of self-learning methodologies.

SUBJECT COVERAGE

TOPICS MAY INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:

- Deep Clustering network for health informatics
- The selection of diverse datasets and problems to test and validate the research outcomes.
- The exploration of the optimal deep learning methodology for data classifications.
- Current approaches on deep clustering.
- Generative Adversarial Network models for the self-learning.
- Challenges on adjusting Hyper-parameters, lack of interpretability, lack of theoretical framework.
- Joint unsupervised learning methodologies.
- Health information standards and regulations
- Security, privacy, and disparities of health information access
- Knowledge sharing in online health communities
- Affordances and constraints of health information technologies
- Ubiquitous computing for chronic condition management
- Consumer access to health information
- Electronic medical records
- Traditional data which is generated in the past decades seeks the requirement for the modern algorithms and process segment/classification.
- An optimised strategy to implement intelligent automation in analysing data.
- Adequate parameter selection to avoid overfitting or underfitting.
- Data science and health analytics

IMPORTANT DATES

Submission of manuscripts: 05 DEC 2020
Notification to Authors: 10 MAR 2021
Final versions due: 25 JUL 2021
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