

Tentative Outline

Special Thematic Issue for the journal Recent Advances in Computer Science and Communications

Title of the Thematic Issue: "Cyber and AI Perspective for Connected Wearables and Data Analytics for Healthcare Applications"

Guest Editors: Dr. Gaurav Gupta and Dr. Manju Khari

- **Scope of the Thematic Issue:**

The special session "Cyber and AI Perspective for Connected Wearables and Data Analytics for Healthcare Applications" is designed to describe the fundamental concepts of Machine Learning, blockchain and security and its application in healthcare.

Researchers working in cyber security, medical imaging and healthcare rely on the expertise of clinicians who play a significant role in understanding complex medical data for diagnosis of diseases. Automation of diagnosis procedures for various healthcare problems may help in improving patient care and overall healthcare. Recently, advanced machine learning methods have shown promising results in biomedical and healthcare applications. Therefore, there is a need to explore novel learning methods, optimization and inference techniques for processing biomedical and healthcare data to get performance closer to clinical diagnosis. Advances in machine learning can be used to develop sophisticated and novel applications in the field of biomedical and healthcare domains. This will attract healthcare practitioners who have access to interesting sources of data but lack the expertise in using machine learning techniques effectively. Special attention will be devoted to handling feature selection, class imbalance, model robustness, scalability, distributed and heterogeneous data sources, and data fusion in biomedical and healthcare applications.

Keywords: Cyber Security, Machine Learning, Boynet, Blockchain, Wearable Devices, Data Analytics

Sub-topics:

- Resource-constrained deep learning for wearable IoT
- Context-aware pervasive wearable health systems based on edge machine learning
- Machine learning and Data Analytics for sensing, analysis, and interpretation in IoT healthcare
- AI driven health & fitness devices, systems, and services
- Wearable devices with custom hardware for medical deep learning
- Neuromorphic AI and cognitive computing in smart health
- Data storage, retrieval and transfer between wearable devices, gateways, and cloud backend
- Body centric wireless communication issues (propagation & transmission), including Ultra wideband, millimeter wave and Tehra-hertz propagation
- Wearable and implantable wireless sensors challenges
- Small scale/nano communication
- Security and privacy issues for wireless healthcare data
- Knowledge graphs and knowledge representation for smart health and IoT
- Connected Wearables for Assisted Living

Tentative titles of the articles:

- Wearable Devices for Alzheimer Patients
- Biomedical Data Analysis and Processing using Explainable Artificial Intelligence and Responsive Artificial Intelligence
- Prediction of Breast Neoplasm using METABRIC Gene Data and Deep Learning

- Security aspects in Medical Data Analysis using Machine Learning Techniques
- Embedding small deep learning models in wearable devices for android watches
- Fog and Cloud computing for secure health solution

Schedule:

- Paper Submission Deadline: **25 December 2022**

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