

Tentative Outline

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

Title of the Thematic Issue: “Explainable Artificial Intelligence in Internet-of-Medical Things”

Guest Editor: Dr. Rutvij H. Jhaveri

Co-Guest Editors: Dr. Mohammad Kamrul Hasan and Dr. Youcef Djenouri

- **Scope of the Thematic Issue:**

In last few years, Internet-of-Things (IoT) has gained significant interest due to its great potential for the future applications. Researchers have identified great potential in sensing through sound waves in a variety of medical applications. Internet-of-Medical-Things (IoMT) is a network of smart interconnected medical objects. Recently IoT sensor networks in healthcare applications have shown great promise for communication and in situations where radio signals are unstable. IoMT systems integrated with artificial intelligence (AI) are revolutionizing the digital healthcare around the world. In spite of providing safer preventive care, economical solution, ambient assistance, improved childcare, enhanced patient-centered solutions, IoMT systems face several challenges in distinct areas. Healthcare researchers around the world are working to solve issues such as management of node mobility and noise, communication overhead, secure and reliable data transmission, privacy of sensitive data, latency in packet delivery, localization, channel modeling and so on. AI on one side promises to solve many critical issues in healthcare IoT, on other side, it brings key issues such as explainability and interpretability. Thanks to the explainable AI (XAI) which can be used to cope with these key challenges. Academic researchers and industries found that XAI techniques have immense potential to address these challenges of healthcare systems. XAI will not only assist the healthcare workers to understand the operating model and decisions, but also will ease the patients in understanding the outcomes. The rapidly increasing challenges from IoT-enabled healthcare applications and potential of XAI techniques are the inspiration behind this special issue. This special issue aims to reflect recent trends in addressing IoMT challenges with XAI methods. Authors are expected to submit experimental, conceptual, and theoretical contributions based on XAI techniques for addressing IoMT challenges. The special issue accepts original experimental results, review papers and case studies. This will provide platform for researchers to submit original manuscripts showcasing findings and exploring emerging trends and challenges for healthcare systems.

Keywords: Interpretable AI, XAI, Big Data, Small Data, IoT, Healthcare Networks, Smart Healthcare Systems.

Sub-topics:

- Constructing smart edge networks for IoMT devices
- Novel communication architecture for healthcare
- Smart Fog/edge computing healthcare architectures
- Intelligent communication system in IoMT
- IoMT protocol design and optimization
- Blockchain integration with XAI for healthcare applications
- Big data driven XAI for healthcare
- Resource-constrained smart solutions in digital healthcare
- Security, resilience, integrity, trust and privacy issues
- Intelligent topology control and secure routing
- Novel algorithms, models, frameworks, platforms for healthcare networks
- Ambient assisted living systems
- Data mining and machine learning-aided IoMT
- Health solutions in acoustic environments

Schedule:

- Thematic issue submission deadline: **31st Aug 2023**

Contacts:

Guest Editor Name: Dr. Rutvij H. Jhaveri (SMIEEE)

Affiliation: Department of Computer Science and Engineering, School of Technology
Pandit Deendayal Energy University, India

Email: rutvij.jhaveri@sot.pdpu.ac.in

Co-Guest Editor: Dr. Mohammad Kamrul Hasan

Affiliation: Center for Cyber Security,
Universiti Kebangsaan Malaysia (UKM)

Email: mkhasan@ukm.edu.my

Co-Guest Editor: Dr. Youcef Djenouri

Affiliation: NORCE Norwegian Research Center Oslo, Norway

Email: yodj@norceresearch.no