SPECIAL ISSUE ON “ADVANCES IN BLOCKCHAIN ASSISTED SECURE INTERNET OF MEDICAL THINGS”

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Proposal:

Blockchain is a disruptive technology with decentralized architecture widely adopted across various sectors for its potential advantages. It provides secure, transparent, and verifiable transactions with the proof of rights and ownership. Blockchain offers the Internet of Medical Things (IoMT) a variety of opportunities through which it supports and transforms the healthcare services to the end-users with improved trust, security, and privacy measures. In other words, blockchain for IoMT acts as a key initiative to transfer centralized medical systems into the decentralized digital identity and information management systems. Broadly speaking, IoMT connects a variety of medical devices across the network to collect and distribute data with the healthcare systems. As IMoT continues to integrate medical devices every day, healthcare organizations utilize these services efficiently to enhance their potentials and empower the growth of the medical sector with valuable data sources. However, with the exponential growth of the medical data, there is an increased risk of security and privacy threats, especially with future generation computing systems.

With blockchain assisted IoMT solutions, the flow of data across the healthcare networks is monitored consistently, and then it is stored across decentralized storage platforms. Thus, the user can efficiently access the data from anywhere with the utmost level of data security and integrity measures. To effectively maintain data accountability and audibility features, private blockchain solutions can be implemented. Thus, it is undoubtable that blockchain is now successfully extended its application across the medical sector in a considerable way. Despite the advantages, the existing methods of blockchain assisted IoMT systems have significant drawbacks such as scalability issues, inadequate ledger storage facilities, increased processing power, and time. To effectively address this concern, this special issue aims to explore advances in blockchain for IoMT applications. However, developing such advanced blockchain solutions for IoMT is of ever-increasing complexity, requires the ultimate level of innovation, and technology, but if explored the right way will result in the next wave of the digital revolution.

We look forward to receive original, and high-quality research articles on blockchain assisted advanced security models and methodologies with improved performance, scalability, and storage facilities for the IoMT environment. The key thematic areas for the special issue include the following:

- Blockchain assisted lightweight protocol design methods for IoMT environment
- Advances in blockchain assisted distributed machine learning solutions for IoMT environment
- Innovative methods of theoretical models and architectural designs for IoMT using blockchain techniques
- Trust-based models for IoMT applications using blockchain methodologies
- Blockchain assisted fog, edge, and cloud computing models for secure IoMT systems
- Advances in blockchain and cybersecurity for secure IoMT applications
- Effective ways to improve performance and efficiency measures of IoMT applications with blockchain techniques
- Blockchain assisted federated learning solutions for secure IoMT mobile applications
- Advances in vulnerability and risk management across IoMT environment with blockchain and Artificial intelligence methodologies
- Blockchain for IoMT security from a future perspective
- Advances in big data analytics with blockchain methodologies for secure IoMT

**Guest Editors:**

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