SI Title:

Knowledge and Service-Oriented Industrial Internet of Things - Emerging Architectures Methodologies and Applications

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SUMMARY

The rapid advancement of technology in telecommunication, artificial intelligence (AI), production, and other fields is ushering in a new age of industrialisation over the last few decades. The evolution of wireless technology has resulted in a new paradigm known as the Internet of Things, or IoT. Though IoT provides many benefits in various IoT application fields, such as smart buildings, medicine, transportation, and the environment, it is also believed to significantly influence the industry by enabling more efficient, optimal management and control at lower costs. IoT is projected to deliver industry-wide improvements and benefits, resulting in the notion of IIoT. The IIoT system enables businesses to collect and analyse massive amounts of data that can optimise the overall operation of industrial systems while also providing a variety of services. With IIOT advancements, it is practicable to integrate all of the information - sensor output, user data, network operator accessibility and knowledge, and much more - to facilitate reliable and realistic real-time feedback.

Predictive maintenance is among the most heavily promoted advantages of IIoT devices in the industrial business. Organisations can predict when a machine will need to be serviced using real-time data generated by IIoT systems. This allows for the necessary maintenance to be completed before a failure occurs. Another advantage is that field service is more effective. Field service technicians can use IIoT technologies to discover possible flaws in client devices before they become serious problems, allowing them to remedy the issues before they cause customers any difficulty. IIoT is primarily knowledge and service-based instead of regular consumer IoT to boost human understanding of the environment. On the one extreme, IIoT data has a massive number and sophisticated qualities, giving it a lot of potential for gaining many forms of essential insights. IIoT, on the other extreme, must meet a wide range of service requirements, including scalability, responsiveness, throughput, dependability, resilience, transparency, and security. Furthermore, the services may vary in a data structure, communication channel, and other aspects. As a consequence, IIoT service demand commitments are more complicated than consumer IoT service need assurances.

In conclusion, this special issue highlights the evolution of IoT in the industrial sector and puts knowledge forward and service-based applications. However, with the ever-growing advancement of IIoT, it faces many technical barriers which require appropriate solutions. Researchers and practitioners are welcome to contribute innovative ideas for the same.

The topics of interest include but are not limited to

1. Essential tools and techniques for IIoT.
2. Security and Privacy concerns in IIoT.
3. Computing and networking frameworks for IIoT.
4. Blockchain systems for industrial Internet of things.
5. New perspectives on IoT for the industrial sector.
6. Machine learning and deep learning techniques for IIoT.
7. Challenges in AI and deep learning models for IIoT.
8. Applications of IIoT in the manufacturing industry.
9. Implementation of big data models in blockchain-based IIoT.
10. Novel connected devices for IIoT.
11. Image processing and visual analytics for IIoT.
12. Challenges in data management for IIoT applications.

Proposed Dates for this SI:

- Manuscript Submission Deadline: 31th January 2024
- Authors Notification: 31th March 2024
- Revised Papers Due: 31th May 2024
- Final notification: 31th July 2024