

Intelligent Informatics for Edge of Things in Smart Industrial Ecosystem

Theme: In recent years, Internet of Things (IoT) has been widely deployed in numerous areas ranging from the development of smart cities and smart homes, smart grid, smart vehicles, smart health to the smart manufacturing and industrial management. By investigating and collecting huge amounts of data in an intelligent manner, smart systems can improvise the decision making, business flows, automate industrial control processes, production, and economic results. With this motivation, IoT has made way into every corner of modern smart industrial ecosystem. Numerous IoT devices and sensors are being used in industrial systems to collect and transmit the data to the cloud data centers for further processing. The amalgamation of cloud computing and IoT in smart industrial ecosystem enables the resource-limited IoT devices to benefit from the cloud-based high performance computing and storage infrastructure. However, such cloud-IoT industrial system may lead towards various challenges such as scalability, mobility, reliability, low latency, network bandwidth consumption and energy efficiency of IoT devices while moving the sensor data to the cloud. Hence, to handle such challenges, a new paradigm named as Edge-of-Things (EoT) has emerged to the rescue of such cloud-IoT industrial systems. In EoT, the edge computing infrastructure is deployed between the cloud computing and IoT-based industrial systems which operates closer to the IoT data source. In this way, the computing, storage and service delivery is moved from cloud to various local edge devices (such as smart phones, smart gateways or routers and local PCs). Hence, the data processing at edge of the network avoid delays and network failures that may interrupt or delay the decision process and industrial service delivery. However, in EoT-based smart industrial ecosystem, there exist several challenges such as restricted wireless resources, middleware platform, heterogeneity, interoperability, and energy efficiency that need to be addressed. Therefore, to overcome these challenges, there is an urgent need for novel algorithms and architectures that lead to more interoperable and energy-efficient solutions for emerging EoT in Smart Industrial Ecosystem. Motivated by these facts, this special issue targets the researchers from both academia and industrial to explore and share new ideas, approaches, theories and practices with focus on EoT technology for sustainable development of Smart Industrial Ecosystem.

This special section will focus on (but not limited to) the following topics:

- Novel Edge computing architecture for Smart Industrial Ecosystem.
- Distributed Deep Learning on Edge devices for industrial data analysis.
- Energy-efficient data offloading over edge for Smart Industrial Ecosystem.
- Energy efficiency and power control mechanisms for EoT in Smart Industrial Ecosystem.
- Software defined networks for heterogenous EoT in Smart Industrial Ecosystem.
- Content centric network for EoT in Smart Industrial Ecosystem.
- Heterogeneity and interoperability challenges for EoT in Smart Industrial Ecosystem.
- New techniques, algorithms and methods of processing industrial data over Edge devices.
- New communications and networking protocols for EoT in Smart Industrial Ecosystem.
- Programming models and toolkits for supporting for EoT in Smart Industrial Ecosystem.
- Trust, privacy and security issues in for EoT in Smart Industrial Ecosystem.
- Simulation, emulation and testbed support for EoT in Smart Industrial Ecosystem.
- Autonomic resource management for EoT in Smart Industrial Ecosystem.
- Mobility and context-aware data processing for EoT in Smart Industrial Ecosystem.
- Emerging smart industrial services and applications over Edge computing
- Social EoT for industrial applications.
- Manuscript Preparation and Submission

Follow the guidelines in “Information for Authors” in the IEEE Transaction on Industrial Informatics <http://www.ieee-ies.org/pubs/transactions-on-industrial-informatics> . Please submit your manuscript in electronic form through Manuscript Central web site: <https://mc.manuscriptcentral.com/tii> . On the submitting page #1 in popup menu of manuscript type, select: SS on **Intelligent Informatics for Edge of Things in Smart Industrial Ecosystem**

Submissions to this Special Section must represent original material that has been neither submitted to, nor published in, any other journal. Regular manuscript length is 8 pages.

Note: The recommended papers for the section are subject to final approval by the Editor-in-Chief. Some papers may be published outside the special section, at the EIC discretion.

Timetable:	Deadline for manuscript submissions	April 30, 2019
	Expected publication date (tentative)	October 2019

Guest Editors:

Prof. Albert Y. Zomaya, University of Sydney, Australia, albert.zomaya@sydney.edu.au

Dr. Neeraj Kumar, Thapar Institute of Engineering and Technology, India neeraj.kumar@thapar.edu

Prof. Joel JPC Rodrigues, National Institute of Telecommunications (Inatel), Brazil joeljr@ieee.org

Dr. Gagangeet Singh Aujla, Chandigarh University, India, gagi_aujla82@yahoo.com