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SPECIAL ISSUE ON
Recent Internet of Things Applications in Smart Grid and Various Industries

Overview:

This special issue focuses on the discussion on the recent advances in technologies and applications of smart grid and the Internet of things (IoT). The IoT is a grand vision as it ascribes the concept of millions of interconnected intelligent devices that can communicate with one another, and thereby control the world around us. The IoT has been widely employed in various industries, including smart energy, smart healthcare, smart factory, smart city, and so on. Technically speaking, the Internet of energy (IoE) and the smart grid can be considered to be an example of the IoT composed of embedded machines, which sense and control the behavior of the energy world, including conventional energy and renewable energy.

With recent development of IoT technologies, enormous increase of interconnected medical facilities, and the progress of the ability of system access and data transmissions, the Internet of medical things (IoMT) emerges to innovate the medical industry. The IoMT can immediately monitor patients' health conditions, adjust patients' behavior, and simplify the clinical and information processes. It not only promote the speed and precision of diagnosis and treatment, but also optimize the communications of doctors and patients inside and outside medical institutes. However, IoT-based medical devices are vulnerable to network attacks. Medical care is a life-critical industry, and hence, any attack would lead to huge cost and loss. Therefore, it has been challenging to design the IoT with security for medical use.

The key of Industry 4.0 is to employ the IoT to connect machines, collect big data, and optimize the production processes. This trend has driven the growth of human resources for mechatronics, quality control, and integrated marketing. The IoT also has brought big data and cloud/fog/edge computing, influencing recent industrial progresses. The point of big data used in Industry 4.0 is to find correlation between items from the data, so that the automated production system can quickly learn and accumulate experiences, which will be integrated with other services for communications, prediction, and decision-making. Through the IoT, the robots are controlled remotely to execute operations, increase the working efficiency and drastically increase the working safety.

In a smart city, advanced information and communication technologies, such as the IoT, cloud computing, mobile Internet, smart terminals, and artificial intelligence (AI), are applied to every object of the production or daily-life systems in the city, such as electricity system, water system, transportation system, building, oil and gas pipeline, factory, office, and home life. Human perception and all facility systems form economical and effective interactions, making the citizens obtain higher working efficiency and better life quality.

Topics

Topics of interest include, but are not limited to, the following scope:

- IoT enabled architectures and models for smart grid, healthcare, Industry 4.0, and smart cities
- Communication networks for smart grids and smart metering
- Advanced Metering Infrastructure (AMI) communication and management

- Sensor, actuator, and machine-to-machine (M2M) networks for smart grid and various industries based on the IoT
- Support for storage, renewable or green energy resources, and micro-grids
- Demand side management, demand response, and dynamic pricing for smart grid
- Architectures and models of the Internet of energy with energy trading
- Intelligent transportation system based on the IoT
- Communication techniques for Internet of vehicles and connected vehicles
- Big data analysis for smart grid and various industries based on the IoT
- AI techniques for smart grid and various industries based on the IoT
- Smart grid cyber security
- Secure design for medical IoT devices
- Security and law issues from the IoT applications and services
- Emerging applications, services, and management models of smart grid
- Reliability, availability, resiliency, and robustness of smart grid and various industries based on the IoT
- Simulation and performance analysis of smart grid communications and operations
- Public applications in smart cities

Important Dates

- **Manuscript submission deadline: December 31, 2019**
- Notification of acceptance: March 31, 2020
- Submission of final revised paper: May 25, 2020
- Publication of special issue (tentative): 4th Quarter, 2020

Submission Procedure

Authors should follow the MONET Journal manuscript format described at the journal site. Manuscripts should be submitted on-line through <http://www.editorialmanager.com/mone/>. A copy of the manuscript should also be emailed to the Guest Editors at the following email address: djdeng@cc.ncue.edu.tw. When submitting papers, authors should choose article type as “**SM 265 - Recent Internet of Things Applications in Smart Grid and Various Industries (SGIoT 2019)**”. Authors need to register to submit their papers. Authors whose selected papers have been accepted and presented at the SGIoT 2019 (<http://sgiot.org/>) are invited to submit an extended and revised version of their papers to this special issue. The papers must have at least 30% new material compared to the conference paper.

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