

## "Advanced Machine Learning for the Big Data of Industrial IoT in Cloud Computing"

**Theme** The industrial internet of things (IoT) is a vast and dynamic industry territory, and is evolving at a rapid pace. The realization of the goal of the industrial IoT brings information communication technologies closer to many aspects of various industries through advanced theories, algorithms, and applications. Machine learning (ML) is a kind of artificial intelligent technology for realizing industry and human life. ML is the intelligence exhibited by machines or software that studies how to create and process big data that is capable of intelligent behavior. It also includes reasoning, knowledge, planning, processing (communication), perception, and the ability to move and manipulate big data. ML is a wide variety of platforms that have allowed different aspects of ML to develop, ranging from expert systems, such as deep-learning frameworks, to robot platforms in the various industry fields. Recent advances in deep artificial intelligent and cloud computing have led to a proliferation of software libraries. The technology for the industrial IoT based on cloud computing has rapidly emerged as a new industry paradigm. These topics will be the most comprehensive field focused on the various aspects of advances in computer engineering technologies, applications, and services. Tremendous advances and algorithms in sensing, processing, communication, and actuating core technologies through big data are leading the provisions of new intelligent IoT services in various industries. As such, there are many issues to realize and provide intelligence IoT services based on applied advanced algorithm and application technologies will need to be provided via much effort and paying an enormous amount of attention to cloud computing. The applied advanced algorithm and application technologies in this research area pose different challenges, such as context information fusion, security, reliability, autonomous and intelligent connecting, trust application and framework for industry environment. The development of advanced machine learning for the big data of industrial IoT in cloud computing research contributions presenting new technologies, concepts, analyses, reports on experiences, implementation experiments, the application of theories, and tutorials on new trends are also needed in this research field.

This special section solicits high quality and unpublished work on recent advanced machine learning for the big data of industrial IoT in cloud computing. It not only provides an excellent opportunity to new gains in flexibility and productivity but also challenges as how to merge existing installations to these new technologies.

### Topics include, but are not limited to

- \* Advanced industrial IoT service algorithms, technologies, and applications of big data in cloud computing
- \* Interoperable and Interactive middleware for industrial IoT for big data in cloud computing
- \* Machine learning technologies, applications, and frameworks for industrial IoT big data in cloud computing
- \* Infrastructure for computing service capabilities for industrial IoT in cloud computing
- \* Real-time algorithms, technologies, and applications with real industry IoT big data in cloud computing
- \* Advanced mathematical theories and technologies related to industrial IoT in cloud computing
- \* Advanced algorithms IoT of industry big data on cloud computing
- \* Advanced security, privacy, authentication, trust, and verification schemes for industrial IoT in cloud computing
- \* Lightweight big data processing scheme for industrial IoT in cloud computing
- \* New applications and services: Cloud computing for industrial IoT with big data

### Manuscript Preparation and Submission

Follow the guidelines in "Information for Authors" in the IEEE- IES website: <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 **Advanced Machine Learning for the Big Data of Industrial IoT in Cloud Computing**

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, additional 4 pages may be allowed for a fee.

**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**      **December 10, 2017 (Extended to Feb. 20, 2018)**  
   **Expected publication date (tentative)**      **May 2018**

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