IEEE Transactions on Industrial Informatics

CALL FOR PAPERS

for Special Section on

High Performance Computing and Communications in Industrial Applications

Theme: With the rapid growth in computing and communications technology, the past decade has witnessed a proliferation of powerful parallel and distributed systems and an ever increasing demand for practice of high performance computing and communications (HPCC). HPCC has moved into the mainstream of computing and has become a key technology in determining future research and development activities in many academic and industrial branches, especially when the solution of large and complex problems must cope with very tight timing schedules. Data is becoming an increasingly decisive resource in modern societies, economies, and governmental organizations. Gradually and steadily, it is being world-wide recognized that data and talents are playing key roles in modern businesses. As an interdisciplinary area, Data Science draws scientific inquiry from a broad range of subject areas such as statistics, mathematics, computer science, machine learning, optimization, signal processing, information retrieval, databases, cloud computing, computer vision, natural language processing, etc. Data Science is on the essence of deriving valuable insights from data. It is emerging to meet the challenges of processing very large datasets, i.e. Big Data, with the explosion of new data continuously generated from various channels, such as smart devices, web, mobile and social media. Data Systems are posing many challenges in exploiting parallelism of current and upcoming computer architectures. Data volumes of applications in the fields of sciences and engineering, finance, media, online information resources, etc. are expected to double every two years over the next decade and further. With this continuing data explosion, it is necessary to store and process data efficiently by utilizing enormous computing power. The importance of data intensive systems has been raising and will continue to be the foremost fields of research. This raise brings up many research issues, in forms of capturing and accessing data effectively and fast, processing it while still achieving high performance and high throughput, and storing it efficiently for future use. Innovative programming models, high performance scalable computing platforms, efficient storage systems and expression of data requirements are at immediate need.

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

1. Networked embedded intelligence at the real-time production control and re-scheduling levels
2. Intelligent automation products and services
3. Flexible, collaborative factory automation
4. Distributed industrial control and computing paradigms
5. Internet-based monitoring and control systems
6. Real-time control software for industrial processes
7. Control of wireless sensors and actuators
8. Data-driven manufacturing
9. Knowledge discovery from multiple information sources
10. Big Data, cloud computing and data intensive systems
11. Innovative data intensive applications such as health, energy, cybersecurity, transport, food, soil and water, resources, advanced manufacturing, environmental Change, and etc.
12. Internet-of-Things for Smart Cities and factories
13. Business intelligence and smart economy
14. Parallel and distributed processing for big data in industry, rail transit, and etc.
15. Parallel computing for artificial intelligence algorithms, systems, and applications
16. Architechure for high performance computing

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 **High Performance Computing and Communications in Industrial Applications**

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

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