IEEE Transactions on Industrial Informatics

CALL FOR PAPERS

for Special Section on

Soft Computing Applications for Novel and Upcoming Distributed and Parallel Systems, from Cloud Computing and Beyond

Theme: Distributed and/or parallel systems are facing a rapid technological evolution thanks to the wide proliferation of Internet accessibility, leading to the advent of several novel solutions such as Cloud Computing, Fog Computing, Edge Computing, and several others. Such systems are characterized by an extremely high number of interconnected nodes with a vast amount of generated data to be exchanged along many types of networks, from wired to wireless. Due to their pervasiveness within our daily activities and the promise of radically changing our way of life, work and entertainment, such systems are much more than a communication infrastructure and demand a deep integration of computational intelligence within the system. To achieve this, it is of critical importance to investigate, implement and apply advanced means to create nodes with intelligent processing capabilities at all levels of these systems, and not just within the core element.
Moreover, such systems are considered essential and need to satisfy a number of non-functional requirements, stemming from performance, reliability, or availability to the security and trustworthiness of the managed data. Traditional solutions to achieving these requirements show diminished effectiveness in modern contexts due to their extremely large scale and the mandatory trade-off between conflicting demands and constraints, such as resource and energy usage. The heterogeneity of workload and QoS (Quality of Service) requirements also makes resource management much harder. For this reason, novel and intelligent solutions are required in which software computing is skillfully applied in order to achieve such goals.
This special issue aims at collecting contributions on the application of soft computing, including the areas of Fuzzy Logic, Neural Networks, Evolutionary Computing, Rough Sets and other similar techniques, in novel distributed and/or parallel systems, where cloud computing is one of the widely-known examples, in order to bring intelligence to all architectural layers for data processing, routing and so on. Furthermore, we solicit contributions also on the use of soft computing in order to design novel solutions for non-functional requirement satisfaction in these systems.

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

Dealing with imprecision, uncertainty and partial truth in processing sensory data

- Intelligent data processing outsourced to the cloud based on deep learning
- Nature-inspired and routing in sensing networks
- Game theoretic solutions for IoT and cloud computing
- Efficient energy usage in the internet of things and/or cloud computing
- Soft computing-based solutions for fault-tolerance in IoT and cloud computing
- Neural networks and Fuzzy logic for security in IoT and cloud computing
- Scheduling for heterogeneous workloads
- QoS (Quality of Service) in multi-core platforms and cloud computing
- Nature-inspired optimization for the trade-off among security, fault-tolerance and performance in IoT and cloud computing
- Concrete application experiences of soft computing in smart cities

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 **Soft Computing Applications for Novel and Upcoming Distributed and Parallel Systems, from Cloud Computing and Beyond**

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	~~**January 31, 2019**~~ **(Extended to Feb. 28, 2019)**
Expected publication date (tentative)	**September 2019**

Guest Editors:

Prof. Chang Choi, Chosun University, Korea changchoi@chosun.ac.kr
Dr. Francesco Palmieri, University of Salerno, Italy fpalmieri@unisa.it
Dr. Juw Won Park, University of Louisville, USA juw.park@louisville.edu
Dr. Hsing-Chung Chen, Asia University, Taiwan cdma2000@asia.edu.tw