



## CALL FOR PAPERS

### Journal of Intelligent & Fuzzy Systems

URL: <https://www.iospress.nl/journal/journal-of-intelligent-fuzzy-systems/>

#### SPECIAL ISSUE ON

#### “Intelligent, Smart and Scalable Cyber-Physical Systems”

#### AIMS & SCOPE:

The integration of human physical processes with the computation has created a new paradigm called Cyber-Physical Systems (CPS). The CPSs control the physical processes by utilizing the computational intelligence to acquire the deep knowledge of the monitored environment. Hence the CPSs are designed to be intelligent to provide highly accurate decisions and appropriate actions promptly. The rapidly growing interconnections between the virtual and physical worlds and the development of new intelligent techniques have created new opportunities for the research for next-generation CPS, that is intelligent cyber-physical systems (iCPS). The iCPS are large-scale software intensive and pervasive systems, which by combining various data sources (both from physical objects and virtual components) and applying intelligence techniques, can efficiently manage real-world processes and offers a broad range of novel applications and services. By equipping physical objects with interfaces to the virtual world, and incorporating intelligent mechanisms to leverage collaboration between these objects, the boundaries between the physical and virtual worlds become blurred. Interactions occurring in the physical world are capable of changing the processing behavior in the virtual world, in a causal relationship that can be exploited for the constant improvement of processes. Intelligent, self-aware, self-managing and self-configuring pervasive systems can be built to improve quality of process across a variety of application domains, helping to address a number of contemporary social and environmental issues.

Components of an iCPS must have a high degree of autonomy while cooperating with each other in a robust, scalable and decentralized way. However, several challenges need to be overcome in order to realize such a paradigm, which is highly multidisciplinary. These challenges range from the design of intelligent physical infrastructures for sensing and communication, data stream processing, data analytics and machine learning techniques to build the intelligence core of these systems through the development of self-adaptive and context-aware software. Moreover, safety, social and behavioral issues also need to be considering, when including human beings as an integral part of these highly complex systems. As CPSs hold strong interactions between the cyber and physical components, it plays a significant role in the development of next-generation efficient-smart systems in various real-time applications. Due to the highly complex intertwining among different components, CPS poses fundamental challenges in multiple aspects, such as real-time data processing, efficient parallel computing, data sensing and collection, and distributed computing. The above-mentioned challenges require innovative technologies to meet the growing demands in the smart homes, connected vehicles,

and smart energy systems. In this regard, the research on the merging and communication between centric systems and information-centric systems in the CPS perspective is deemed to be extremely promising.

This special issue is intended to report high-quality research on recent advances toward the realization of the Smart Cyber-Physical Systems paradigm. We are interested in all aspects pertaining to this multidisciplinary paradigm, in particular, in its application to building Smart and sustainable spaces. This special Issue will report the recent increasing interests in the design and development of intelligent techniques for various applications of Cyber-Physical Systems. Moreover, the authors are expected to investigate state-of-art research issues, architectures, applications and achievements in the field of Cyber-Physical Systems. Unpublished innovative papers which are not currently under review to another journal or conference are solicited in the following relevant areas.

**Topics of interest include, but are not limited to:**

- Data management and knowledge representation for Cyber-Physical Systems
- Algorithms, models, and designs for social Cyber-Physical Systems
- Machine learning for high-performance computing with Cyber-Physical Systems
- User activities recognition for Cyber-Physical Systems
- Web applications for Cyber-Physical Systems
- Nature-Inspired Algorithms for Cyber-Physical Systems
- Deep Learning and Deep Computation for Cyber-Physical Systems
- Social Intelligence and Agent-based Computing
- Ubiquitous Intelligence and Cyber-Physical Computing
- Internet of Things and Cyber-Physical Systems
- Pervasive device virtualization (PDV)
- Privacy, Security, and Trust in Cyber-Physical Systems
- Context-Aware Computing for Cyber-Physical Systems
- Intelligent Social Networking
- Pervasive Technologies for Intelligent Transportation Systems
- Ambient Intelligence and HCI for Pervasive Computing
- Semantic Technologies Rapid Application Development for Cyber-Physical Systems
- Efficient inference methods for mobile multimedia deep networks
- Learning for ranking and recommendation on big data
- Robotics, intelligent system and advanced manufacturing with Cyber-Physical Systems
- Cyber-Physical Hybrid Intelligence
- Cyber-Social Networks
- Cyber-Sociology, Cyber-Culture, and Cyber-Economy
- Cyber-Social Simulation
- Cyber-Behaviour Analytics
- Cyber-Crowdsourcing
- Applications of the intelligent decision approaches
- Intelligent decision making in complex and dynamic contexts
- Fuzzy preference modeling in intelligent decision support systems
- Intelligent negotiation systems

- Fuzzy consensus and decision making in Web frameworks for Cyber-Physical Systems
- Aggregation of fuzzy preferences
- Missing preferences in the fuzzy decision making
- Consensus and fuzzy ontologies for different intelligent decision-making models
- Novel and incentive applications of Cyber-Physical Systems in various fields
- Other relevant topics for emerging Cyber-Physical Systems

### **Important Dates:**

Paper submission deadline	:	<b>August 15, 2018</b>
Notification of acceptance	:	September 30, 2018
Submission of revised papers	:	October 31, 2018
Final decision	:	November 15, 2018
Final papers due	:	November 30, 2018

### **Notes for Prospective Authors:**

All papers are refereed through a peer review process. Submitted papers should present original, unpublished work, relevant to one of the topics of the Special Issue. All submitted papers will be evaluated on the basis of relevance, the significance of contribution, technical quality, scholarship, and quality of presentation, by at least three independent reviewers following the JIFS reviewing procedures. It is the policy of the journal that no submission, or substantially overlapping submission, be published or be under review at another journal or conference at any time during the review process.

### **Publication fee:**

A publication fee is charged for all articles that are accepted for publication in the Journal of Intelligent & Fuzzy Systems. Authors or their funder/employer pay a publication fee of EURO 135 for an accepted article. To ensure fair and consistent treatment of authors, no exceptions will be made.

### **Submission guidelines:**

The authors should prepare their manuscript following the formatting guidelines set out by Journal of Intelligent and Fuzzy Systems and Journal style templates are available at:

<http://www.iospress.nl/wp-content/uploads/2015/05/JIFS-Submission-Templates-LaTeX.zip>

<http://www.iospress.nl/wp-content/uploads/2015/05/JIFS-Submission-Templates-MsWord.zip>

The author can choose to use either the LaTeX (preferred) or the MS Word template.

Papers page limits: 12 pages

**Submission link:**

All manuscripts should be submitted online at

**<https://easychair.org/conferences/?conf=isscps2018>**

For further query or inquiries, please contact the corresponding Guest Editor Dr. Vijayakumar V. (see contact details below).

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