



Special Issue Call For Papers

Special Issue on "New trends and challenges of bio-inspired Computational Intelligence algorithms in Massively Complex Systems"

Guest Editors: Dr. Antonio Gonzalez-Pardo (Corresponding Guest Editor)

Dr. Hujun Yin

Dr. Antonio J. Tallón-Ballesteros

A. The topic

Massively complex systems, like social networks, renewable energy problems, or Internet-of-Things problems, amongst others, generate massive amounts of data. These massively complex systems have attracted the attention of both industrial and research communities, because the analysis of data can generate valuable knowledge about the specific domain. But at the same time, the amount of data generated and the complexity of the problems mean that classical algorithms and approaches do not provide suitable solutions. In this case, it is quite common Computational Intelligence (CI) techniques to extract the knowledge. Computational Intelligence can be defined as a set of bio-inspired research areas focused on the study of adaptive mechanisms to enable, or facilitate, intelligent behaviour in complex and changing environments. There are several research fields that compose CI including Swarm Intelligence, and Evolutionary Computation, amongst others. This special issue is focused on the application of bio-inspired algorithms applied to massively complex systems, ranging from concepts and theoretical developments to advances technologies and innovative applications.

This Special Issue will be based on **open call** (i.e. works that have not been published, nor submitted anywhere else for publication), and invitation of selected papers that were accepted and presented at the **19th International Conference on Intelligent Data Engineering and Automated Learning** (IDEAL 2018) (<http://aida.ii.uam.es/ideal2018/>). New papers not submitted to this conference will be also considered for publication. The manuscripts will be judged solely on the basis of new contributions excluding the contributions made in earlier publications. Contributions should be described in sufficient detail to be reproducible on the basis of the material presented in the paper and the references cited therein.

Topics appropriate for this special Issue include, but are not necessarily limited to:

Computational Intelligence algorithms

- Ant Colony Optimization
- Particle Swarm Optimization
- Genetic Programming
- Evolution Strategies
- Bacterial Foraging
- Artificial Bees
- Estimation of Distribution Algorithms
- New Swarm Intelligence approaches

Massively Complex Systems

- Social Networks Analysis
- Smart Cities
- Emerging and collective behaviours in complex distributed systems
- Intelligent integration of heterogeneous data and processes
- Knowledge integration and fusion from distributed sources
- Data mining and knowledge discovery in complex environments
- Renewable Energy Applications

B. Submission and review

All submissions will be reviewed by 3 different reviewers, according to the journal peer-review policy. Please submit your contribution to <https://onlinelibrary.wiley.com/journal/14680394> inserting the acronym for your Special Issue: EXSYS-IDEAL2018.

For preparing your manuscripts please use the instructions and templates available at: [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1468-0394/homepage/ForAuthors.html](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1468-0394/homepage/ForAuthors.html)

C. Important Dates

- **First Submission:** 18 January 2019
- **First notification:** 15 March 2019
- **Submission of the revised version:** 19 April 2019
- **Final decision:** 21 June 2019
- **Submission of camera ready:** 19 July 2019
- **Journal issue:** 2019/2020

D. Potential contributors

Submitted papers must be unpublished and not submitted anywhere else for publication. If a shorter version of the paper has been accepted or published in a conference, **then the submission must contain at least 30% new material as compared to the conference publication** this must be mentioned when submitting the paper, as well as the name of the conference and the title of publication. The EXSYS-IDEAL2018 Special Issue will be based on submissions attracted by:

- A) Open call, which commits with previous conditions
- B) Invitation of selected papers that were accepted and presented at the IDEAL 2018 conference and their joint workshops (<http://aida.ii.uam.es/ideal2018/>). **These submissions**

must differ at least 30% from the initial versions published in the IDEAL 2018 proceedings.

More specifically, we expect:

- The update of the title and the abstract
- The extension and elaboration of the key ideas
- The extension of the related work section and list of references
- More extensive and/or larger examples/experiments, if applicable
- Improved descriptions of algorithms or applications, if applicable
- Improved discussion and/or conclusion sections

Guest Editor(s)

[Dr. Antonio Gonzalez-Pardo](#) (Universidad Autonoma de Madrid, Spain)

[Dr. Hujun Yin](#) (University of Manchester, UK)

[Dr. Antonio J. Tallón-Ballesteros](#) (University of Seville, Spain)

Deadline for Submission: January 18th 2019