



Annals of Operations Research

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Call for Papers

SPECIAL ISSUE ON

Cognitive Systems and Operations Research in Big Data and Cloud Computing

This is a call for papers that make a significant contribution to the topic *Cognitive Systems and Operations Research in Big Data and Cloud Computing*. It is open to all researchers of this area. We would like to encourage, in particular, all participants of BWCCA 2015 and 3PGCIC 2015 to submit extended versions of their presented papers.

Overview:

In recent years, intelligent information processing has gone beyond its association with traditional disciplines in which data are acquired and processed, such as computer science, electronics, telecommunications, or even economics, to become the basis of such new scientific disciplines as cognitive informatics and even selected fields of operations research and life sciences. In all there is a need to understand the mechanisms by which humans and computers absorb information or its semantic meaning, and optimally apply these to learn and solve very complex problems by using artificial thinking processes and intelligence. New computation paradigms are needed to solve classes of problems connected with big data repositories or cloud computing.

Obviously techniques that support big data analysis must also be efficient, guaranteeing not only optimal solutions, but also proper transmission and interpretation. Although meeting such requirements frequently turns out to be difficult, many modern solutions and progress in cognitive informatics and operations research techniques ensure such features. This leads back to a huge demand for new, innovative, and effective solutions for intelligent big data processing, having the form of different signals, collected on distributed computers, and used to provide different services via cloud computing infrastructures.

To consider these interesting and significant topics related to the quickly developing field of cognitive systems and operations research, we have decided to edit this special issue on “*Cognitive Systems and Operations Research in Big Data and Cloud Computing*.”

Topics

Topics of interest include, but are not limited to:

<ul style="list-style-type: none"> – New approaches for big data analysis – Advanced techniques for information fusion and knowledge extraction – Bio-inspired approaches in cloud computing – Biological models for information processing – Application of operations research in cloud computing – Operation research in big data application and secure communication – Cognitive information systems for intelligent multidimensional signal processing – Application of cognitive systems in in healthcare 	<ul style="list-style-type: none"> – Visual data analysis and semantic description – Optimal solutions in advanced visual interfaces – Computational intelligence techniques and application – Operations research in ambient intelligence and pervasive computing – Big data processing for multimedia and graphics – Operations research in biomedical and industrial application
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and e-economy – Optimization problems in data processing and communication	– Data processing in the cloud-based systems – New and innovative application of operations research
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Quality of papers and relevance to the special volume's topic are the most important criteria for accepting contributions.

Each selected paper from a conference must be extended by more than 50% of its content upon first submission.

Each paper submitted for this Special Issue (including the selected papers from the conference) will go through a rigorous peer-review process by at least two international researchers.

Instructions for authors can be found at:

<http://www.springer.com/business/operations+research/journal/10479>

Authors should submit a cover letter and a manuscript by **01 May 2016** via the Journal's online submission site. Manuscripts submitted after the deadline may not be considered for the special issue.

Please see the Author Instructions on the web site if you have not yet submitted a paper through Springer's web-based system, Editorial Manager. Be sure to note when leaving a comment that your work is intended for the special issue and to select the article type "***CS and OR in Big Data and Cloud Com***".

The review process will be managed by the guest editors and accepted papers will be published online individually, before print publication with a fully citable doi number.

Guest Editors:

- **Prof. Marek R. Ogiela**, AGH University of Science and Technology, Krakow, Poland, mogiela@agh.edu.pl, <http://home.agh.edu.pl/~mogiela/>
- **Dr Hoon Ko**, The Department of Informatics, J. E. Purkinje University, Usti nad Labem, Czech Republic, dr.hoonko@gmail.com