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Data Analytics and Optimization for Decision Support

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1 Special Issue

1.1 Theme

Traditional methods for addressing an industrial optimization problem usually follow the workflow of "Modeling-Algorithm-Analysis". This means first formulating a specific industrial problem and establishing its mathematical optimization model, then finding or designing an algorithm/method addressing the problem, and finally analyzing the results. This method is primarily used when not enough data is available.

However, with the pervasive applications of the new generation of information technologies (such as cloud computing, internet of things, big data, mobile internet, artificial intelligence) in industry, a massive amount of data is generated and collected in the entire process of industry, which makes "data-driven optimization" a new effective method for industrial optimization.

Therefore, we suggest this special issue which focuses especially on data analytics *AND* optimization for decision support. The direction mentioned above will change, and the key question is how might optimization techniques support modern data analytics?

On the other side, the type of big data generated in the entire process is still unclear. Furthermore, the transformation of the traditional mathematical optimization model to a data-based optimization model (i.e., network-based optimization mode), collection and management of useful data, and the extraction and utilization of useful information from such huge and dynamic "big data" are challenging tasks. This has recently motivated researchers and scientists to explore new methods and technologies for industrial applications of complex network and big data in industrial optimization, especially machine learning and artificial intelligence.

1.2 Objective

The objective of this Special Issue on "Data Analytics and Optimization for Decision Support" is to present the latest advances and developments of methods, techniques, systems and tools dedicated to that relationship between data analytics and optimization.

Topics include, but are not limited to, the following:

- Data Mining and Optimization with Big Data
- Industrial Applications of Big Data
- Complex Network Based Information System Modeling and Optimization
- Modern Optimization Techniques in the Context of Analytics

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- Data-Driven Enterprise Information Systems Modeling
- Internet-of-Things
- Predictive and Prescriptive Maintenance
- IoT—Cloud-Based Optimization
- Simulation-Based Optimization
- Data-Driven Modeling and Simulation

2 Submission

Please submit papers by 1 July 2018 at the latest via the journal's online submission system (http://www.editorialmanager.com/buis/). Please observe the instructions regarding the format and size of contributions to Business & Information Systems Engineering (BISE). Papers should adhere to the submission general BISE author guidelines (http://www.bise-journal.com/?page_id=18).

All papers will be reviewed anonymously (double-blind process) by at least two referees with regard to relevance, originality, and research quality. In addition to the editors of the journal, including those of this special focus, distinguished international professionals with scientific and practical backgrounds will be involved in the review process.

3 Schedule

Paper submission due: 1 July 2018
Notification of authors: 26 August 2018
Revisions due: 28 October 2018
Notification of authors: 16 December 2018
Completion of a second revision (if needed): 20 January 2018
Anticipated publication date: June 2019