Call for Papers: Special Issue on Computational Intelligence Methods for Big Data Analytics under Uncertain Environments

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1   Theme

Automatic extraction of knowledge from massive data samples, i.e., Big Data Analytics (BDA), has emerged as a vital task in almost all scientific research fields. The BDA problems are rather difficult to solve due to their large-scale, high-dimensional, and dynamic properties, while the problems with small data are usually hard to handle due to insufficient data samples and incomplete information. Such difficulties lead to what is known as the search-based data analytics problem, where a data analysis task is modeled as a complex, dynamic, and computationally expensive optimization problem and then solved by using an iterative algorithm.

BDA can be characterized by several properties, such as large volume, a variety of different sources, and fast increasing speed (velocity). It is of great interest to investigate the role of Computational Intelligence (CI) techniques, including Evolutionary Algorithms, Soft Computing, and Swarm Intelligence algorithms for the optimization and learning involving big data, in particular, the ability of EC techniques to solve large scale, dynamic, and sometimes multi-objective BDA problems.

This special issue aims to bring together both experts and new-comers from either academia or industry to discuss new and existing issues concerning computational intelligence and big data, in particular, to the integration between academic research and industry applications, and to stimulate further engagement with the user community.

2   Scope of Topics

This special issue aims at presenting the latest developments of CI techniques for BDA problems under uncertain environments, as well as exchanging new ideas and discussing the future directions of CI for big data. Original contributions that provide novel theories, frameworks, and solutions to challenging problems of BDA are very welcome for this special issue. You are invited to submit papers that are unpublished original work for this special issue at *Complex System Modeling and Simulation*.

Potential topics include, but are not limited to

➢ High-dimensional and many-objective computational intelligence

➢ Integrative analytics of diverse, structured, and unstructured data

➢ Extracting new understanding from real-time, distributed, diverse, and large-scale data resources

➢ Big data visualization and visual data analytics

➢ Scalable, incremental learning and understanding of big data

➢ Scalable learning techniques for big data

➢ Big data-driven optimization of complex systems

➢ Human-computer interaction and collaboration in big data

➢ Big data and cloud computing

➢ Big data techniques for business intelligence, finance, healthcare, bioinformatics, intelligent transportation, smart city, smart sensor networks, cybersecurity, and other critical application areas

3   Guest Editors

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4 Important Dates

Manuscript submission due: 31st Jan. 2022

First review completed: 15th Apr. 2022

Revised manuscript due: 30th June 2022

Second review completed: 31st Aug. 2022

Possible publication: 1st Oct. 2022

5 Submission Guidelines

Manuscripts should be submitted through the publisher's online system at https://mc03.manuscriptcentral.com/csms-tup. Please follow the instructions described in the submission website. Please make sure you select "**Special Issue on Computational Intelligence Methods for Big Data Analytics under Uncertain Environments**" as Article Type . In preparing the manuscript, the authors are asked to closely follow the "Instructions to Authors". Submissions will be reviewed according to CSMS rigorous standards and procedures through a peer review by at least two qualified reviewers.