Complexity

Special Issue on

Overcoming "Big Data" Barriers in Machine Learning Techniques for the Real-Life Applications

CALL FOR PAPERS

Today quantity of data produced daily by various information systems can be measured in "zetabytes." The question of how to solve large and complex machine learning and combinatorial optimization problems is nowadays the focus of numerous research teams. Advances in dealing with big data problems, albeit in many cases spectacular, are far from being satisfactory for the real-life applications. This becomes especially true in numerous domains where machine learning tasks are crucial to obtain knowledge on different processes and properties in areas such as bioinformatics, text mining, or security. Unfortunately, majority of the current machine learning algorithms become ineffective when the problem becomes very large since underlying combinatorial optimization problems are, as a rule, computationally difficult. There exists a variety of methods and tools which are excellent at solving small and medium size machine learning tasks but become unsatisfactory when dealing with the large ones.

The purpose of this special issue is to publish high-quality research papers as well as review articles addressing recent advances in the machine learning techniques and their applications when dealing with large and complex problems.

Current hot topics in the quest to improve effectiveness of the machine learning techniques include search for a compact knowledge representation methods and better tools for knowledge discovery and integration. Machine learning may also profit from integrating collective intelligence techniques, applying evolutionary and the bioinspired techniques, and exploring further deep and extreme learning techniques.

This special issue deals with the importance of solving large and complex problems in the domain of machine learning and other relevant fields. Papers on the real-life applications of machine learning techniques are especially welcomed.

Topics of the submitted papers should focus on methods and applications, where specialized tools and techniques are used to enhance, support, or replace traditional approaches to machine learning and data mining.

Potential topics include but are not limited to the following:

- Tools and techniques for solving complex machine learning problems
- Computational intelligence applications for machine learning
- Evolutionary and coevolutionary algorithms and their applications for machine learning
- Data analysis methods based on rough sets, fuzzy sets, Bayesian networks, and artificial neural networks
- Adaptive and evolving learning methodologies for big data analysis
- Data stream mining
- Optimization and strategies for machine learning
- Collective decision making for machine learning
- Multiagent system and agent-based modeling for machine learning
- Real-life applications of the machine learning techniques
- Other related topics

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/complexity/obdml/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

Lead Guest Editor
Ireneusz Czarnowski, Gdynia Maritime University, Gdynia, Poland
irek@am.gdynia.pl

Guest Editors
Tülay Yildirim, Yildiz Technical University, Istanbul, Turkey
tulay@yildiz.edu.tr

Piotr Jędrzejowicz, Gdynia Maritime University, Gdynia, Poland
pj@am.gdynia.pl

Kuo-Ming Chao, Coventry University, Coventry, UK
csx240@coventry.ac.uk

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