

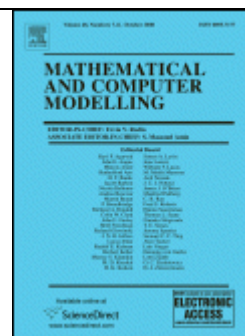
Mathematical and Computer Modelling

Call for Papers

Special Issue on

Optimization-based Knowledge Discovery and Its Applications

Guest Editors: Dr. Lean Yu, Dr. S.K. Mishra & Prof. K.K. Lai



In the past decades, the researchers in the field of data mining and knowledge discovery have extensively applied optimization techniques into classification, regression, clustering, as well as many practical applications. According to the literature survey, O. L. Mangasarian and his colleagues have formulated linear programming (LP) as a large margin classifier in the 1960s. In the 1970s, A. Charnes and W.W. Cooper initiated data envelopment analysis (DEA) where a fractional programming is used to evaluate decision making units, which is economic representative data in a given training dataset. In the following two decades, F. Glover proposed a number of linear programming models to solve discriminant problems with a small sample size of data. Since 1990s, V. Vapnik and his colleagues proposed support vector machines (SVM) into data mining and knowledge discovery field via quadratic programming (QP), which differs from statistics, decision tree induction, and neural networks. Until now, a great number of scholars across the world have been actively working on this field of using optimization-based techniques to handle data mining and knowledge discovery problems.

However, there are still many issues that are worth further exploring in the optimization-based knowledge discovery theory and practical application problems. A typical example is how to deal with the multiclass problems using optimization techniques for a huge dataset with a large sample size. In order to promote further development of optimization-based knowledge discovery theory, the special issue will not be to merely illustrate the superior performance of the optimization-based knowledge discovery method, but also to demonstrate how it can be used effectively in some practical application problems. For this purpose, *Mathematical and Computer Modelling* will publish a special issue dedicated to the theme of “*Optimization-based Knowledge Discovery and Its Applications*”. We cordially invite the authors of papers presented at The 2009 International Joint Conference on Computational Sciences and Optimization (CSO2009), April 24-26, 2009 and The 2nd International Conference on Business Intelligence and Financial Engineering (BIFE2009), July 24-26, 2009, Beijing, China to submit their expanded papers with at least 30% additional materials relative to conference papers to this special issue of the *Mathematical and Computer Modelling*. New submissions related to the following topics are welcome.

Topics

This special issue will include, but not limited to the following topics:

- Foundation of Optimization-based Knowledge Discovery Theory
- Optimization-based Classification
- Optimization-based Regression
- Optimization-based Association rules Mining and Discovery
- Optimization-based Clustering Analysis
- Optimization-based Web Mining
- Optimization-based Information Retrieval
- Optimization-based Knowledge Search
- Optimization and Artificial Intelligence
- Practical applications about optimization-based knowledge discovery in astronomy, geography, transportation, finance and economics etc.

All papers will go through the normal refereeing process in accordance with the high standard of Mathematical and Computer Modelling. Papers should be prepared according to the “Guide for Authors” on the journal website: <http://www.elsevier.com/locate/mcm>. Please submit your papers to Dr. Lean Yu (Email: yulean@gmail.com) no later than October 1, 2009 with a subject of “MCM Special Issue Submission”.

Important Dates

(1) Full papers submission : October 1, 2009	(4) First round revision: March 1, 2010
(2) Relevancy Review and Evaluation: October 15, 2009	(5) Final manuscripts ready: April 15, 2010
(3) First round of peer-review: January 1, 2010	(6) Special issue papers to the publisher: May 1, 2010

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