Editorial

Dear colleague

Welcome to volume 17(5) of Intelligent Data Analysis Journal.

This issue of the IDA journal consists of nine articles which represent many aspects of theoretical and applied research, all related to the field of Intelligent Data Analysis.

The first article of this issue by Matarese *et al.* discusses the importance of data preprocessing. They argue that in a typical data analysis example, when the aim of a system trained through a supervised learning procedure is to approximate an existing functional relationship between input and output variables, the database that is used in the training phase should not contain input-out patterns for which there is inconsistency. They propose a procedure for detecting non-coherent associations between input and output patterns through comparison of two distance metrics. The efficiency of their approach is presented in their article. Sokolova and Fernandez-Caballero in the second article of this issue introduce an approach to study complex systems and introduce an approach for mining and simulating data in this class of environments. Their proposed framework consists of three phases which consist of preliminary domain and system analysis, system design and coding and finally simulation and decision making. Their experiments to evaluate their proposed approach are fairly elaborate and they cover a wide range of issues in dealing with complex information systems. Arenas *et al.* in the next article of this issue argue the influence of parameters and selection of the most relevant ones on the behavior and performance of search algorithms. They propose a method that is essentially based on ANOVA. Their proposed method is evaluated in an exhaustive analysis of an evolutionary algorithm where the authors verify the adequacy of parameter values in their experiments.

Robnik-Sikonja *et al.* in the next article of this issue discuss the role of probabilistic radial basis function network being an important form of classification. They demonstrate a method that is a variation of a one-variable-at-a-time and all subsets explanation and apply it for their experiments. For evaluation they use several artificial and real data sets where they demonstrate the usefulness of their proposed approach. Wang and Song in the fifth article of this issue discuss feature selection in data analysis and propose an algorithm that mines association rules from a given data set, identifies relevant and interactive features values, and detects and eliminates redundant features. The effectiveness of their algorithm is tested on both synthetic and real data sets where the results show that their algorithm outperforms other feature selection algorithms in terms of classification accuracy. The next article of this issue by Mottin *et al.* is also on feature selection. The authors study how the log information can be analyzed in order to improve the ranking of the results returned by an entity search engine. They present a novel framework for feature extraction that is based on the notions of entity matching and attribute frequencies where the extracted features are used to train a ranking classifier. Their experiments also show their algorithm performs better in terms of accuracy.

Gomez and Vaisman in the seventh article of this issue discuss mining data from semantic trajectories that are along the line of moving objects. They present a language that is based on regular expressions over constraints where sequential patterns can be expressed. The authors also introduce a data mining algorithm that is based on sequential pattern mining and evaluate the performance of this algorithm on a case study where the main variables that impact the algorithm are investigated and the results are shown.

Finally, the last two articles of this issue are on mining frequent patterns, mostly from customer data. Huang *et al.* discuss the patterns in customer data when customer interests change. They propose a sequential pattern mining algorithm that incorporates the concepts of frequency, recency and profit to discover frequent, recent and profitable sequential patterns. Their algorithm that is incorporated into a recommender system is evaluated using a real customer data where the results are shown better performance of this proposed recommender comparing some exiting ones. The last article by Yun *et al.* is also on pattern mining where the authors propose two mining algorithms that are suitable for mining compact and meaningful set of frequent patterns. The two algorithms are evaluated in this article where the authors show the efficiency and scalability of their algorithms.

In conclusion, with this issue of the IDA journal which is Volume 17(5), we are glad to report continuous increase in submission of manuscripts to our journal for evaluation and publication. We continue our efforts to select the highest quality papers. In addition, this year's Intelligent Data Analysis Symposium (IDA-2013) will be held in London, UK from October 17–19. For more information please refer to http://sites.brunel.ac.uk/ida2013. We look forward to receiving your feedback along with more and more quality articles in both applied and theoretical research related to the field of IDA.

With our best wishes,
Dr. A. Famili
Editor-in-Chief