Editorial

Dear Colleague:

Welcome to volume 12(1) of *Intelligent Data Analysis* – An international Journal.

The first issue of volume 12 consists of seven articles. This issue contains a collection of articles representing various topics, all related to the field of intelligent data analysis.

Ozcan et al., in the first article, discuss Hyper-Heuristics, which normally operates on top of a set of heuristics in a given data analysis application, such as optimization. Their article starts with an in-depth study of hyper-heuristics. This is then followed by an evaluation of the best hyper-heuristics algorithm and its comparison with a number of genetic and memetic algorithms on fourteen benchmark functions. Their study concludes that memetic algorithms perform significantly better than genetic algorithms and the use of hyper-heuristics helps in the search process. Chen in the next article discusses the problem of mining contiguous item sequential patterns as a sequential mining problem. She proposes a new data structure, called Up-Down Tree where, based on her results, she demonstrates that the proposed data structure can improve the efficiency of this type of data mining applications, by outperforming some of the existing methods.

Feldman et al. in the third article, present a modular information extraction system that is based on a flexible language called DIAL. This language, that is abased on a common natural language processing infrastructure, allows users to rapidly implement information extraction solutions for various domains. The article includes an evaluation of the system to domains such as large amounts of e-mail data. Choo et al. discuss attribute reduction in data analysis and propose a combination of statistical and rough set methods to reduce important attributes in a simpler way while maintaining a lesser degree of information loss from the raw data. They use ten data sets from UCI collection to compare their approach to classical rough reducts, statistical entropy and correlation based feature selection. Their experiments showed the superiority of their approach on higher reduction strength and generating smaller rule sets.

The last three articles of this issue are mostly on applied research. Marroquin et al., discuss ways to improve performance measures in manufacturing through use of novel clustering techniques. These methods are primarily for finding a solution to multi-criteria optimization problems via an approach called Data Envelopment Analysis. With the main objective being use of the least amount of computational resources, the authors demonstrate how different grouping techniques can substantially reduce the analysis time. In the next application article, Arciniegas Rueda et al. investigate the process of variable selection in a complex economic domain, such as currency crisis where the entire economy may depend on non-linear relations among several variables. They introduce a method called partial least squares sensitivity analysis that is used for selecting relevant variables. They further demonstrate the performance of this method in a complex banking and currency application. In the last article of this issue, Chen and Wang propose a hybrid intelligent approach targeting a manufacturing optimization application. The proposed method is a combination of a fuzzy-c-means, fuzzy-back-propagation neural nets, and use of a fuzzy out-projection function. The entire method is evaluated using a complex simulated semiconductor plant, where the results demonstrate its advantages over some of the existing approaches.

In conclusion, as part of Volume 12 of the IDA journal in 2008, we will have three special issues that are from three events, either conferences or special workshops that were held recently. Details of these special issues will become available within the next issues.

With our best wishes,

Dr. A. Famili
Editor-in-Chief