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Editorial

Dear Colleague:

Welcome to volume 13(1) of *Intelligent Data Analysis* – An international Journal.

The first issue of volume 13 consists of seven articles. These articles represent different areas in IDA covering both applied and theoretical research. They vary from supervised and unsupervised learning to data preprocessing and forecasting.

In the first article, Vanderlooy et al. address the problem of incorrect use of machine learning classifiers and argue that these classifiers should only be used when their performance can be defined by users. Their proposed approach, which is evaluated in the article, is based on a new ROC isometrics where their tuning results in generating more reliable classifiers. Castillo and Gama's research, in the second article of this issue, is about adaptive learning and how predictive models can be quickly adapted to the changes in data streams. They propose a framework for supervised learning which deals with cost-performance trade-off and concept drift. Their approach is experimentally evaluated and is compared with non-adaptive learning methods.

Spatial clustering and data preprocessing are the topics of the next two articles. Zarnani et al., in an applied research article, investigate the use of spatial clustering methods to solve the problem of optimal facility establishment. They introduce a number of novel algorithms that determine the optimal locations in facility establishment of large organizations. Their studies include a large number of experiments and use of synthetic and real data sets where the advantages of the proposed algorithms are demonstrated. Janeja and Atluri discuss limitations of existing outlier detection methods and propose an approach to address their shortcomings. Their approach is based on identifying attribute dependencies in multi-level distributions taking into account auto correlations and heterogeneity in data. Their experimental results on various data sets demonstrate how outliers can be identified in heterogeneous neighborhoods.

Mining constraint-based patterns and their limitations are the topic of the next article, by Soulet and Crémilleux. Practically, the main limitations of constraint based pattern discovery are the languages that are used to describe the ideal patterns. This article proposes a generic framework to deal with partially ordered language and large set of constraints. The authors demonstrate how primitive based constraints can be mined and the results could be an automatic deduction of pruning conditions. This is dome through a number of experiments involving several constraints, all reported in the article. Menke and Martinez in the next article, discuss oracle learning, an approach to use a fairly large and complex model to properly train a smaller model on unlabeled data in order to further improve the results of any learning applications. The article is about using oracle learning as applied to multi-layer perceptrons using back propagations. The article includes results of the evaluation of their approach on optical character recognition with an interesting reduction in error rate and very high accuracy.

The last article of this issue by Joo Oh et al. is about intelligent forecasting for time series data. The main motivation for this research was dynamic changes that are sometimes part of the environment for which the time series data is applied. These dynamic changes, that are also called structural, make the prediction task difficult. The approach proposed in this article is a two stage method that is based on mixing various classifiers in order to enhance the predictability of any classification method. The article includes the evaluation of this method on two different data sets.

In conclusion, this issue is the beginning of our 13th year of publication. We greatly appreciate the support and encouragements that we have received from our readers and colleagues. We look forward to receiving more and more quality articles in both applied and theoretical research in the field of Intelligent Data Analysis.

With our best wishes,

Dr. A. Famili
Editor-in-Chief