

## Editorial

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Dear Colleague:

Welcome to volume 11(3) of *Intelligent Data Analysis* – An international Journal

Following is a brief summary of all 5 articles in this issue of the IDA journal. The first two articles are about data preprocessing, understanding the contents of data and handling noise. Of the remaining three articles, although they are all on classification and modeling, each addresses a unique topic that should be of interest to many readers in the IDA community.

The first article by Utkin introduces a novel method to construct hierarchical uncertainty models to handle expert judgments. The approach proposed is able to compute second order probabilities and has advantages such as: (i) the probabilities can be updated after observing, (ii) uncertainty models obtained are more realistic, and (iii) being able to handle conflicting judgments, make cautious inference and probabilities can take into account the incompleteness of available information. Khoshgoftaar et al., in the next article of this issue, propose a method to detect and handle noise in continuous dependent attributes. Their procedure is based on statistical methods and utilizes multiple imputations. Evaluating their approach, the authors demonstrate the effectiveness of their method using a real-world data set that contains inherent noise. The article also contains a comparison of their approach with other noise correctors using some well-known estimation procedures.

The last three articles are all about classification. To improve time and space efficiency in mining frequent itemsets, Huang et al. introduce a novel approach that uses a simple decomposing principle. The method is based on minimal heap tree, it quickly discovers frequent itemsets, it does not need to scan a database and it can be applied to on-line incremental data mining applications. Their experimental results show how the new method outperforms comparing algorithms. Wang et al., in the next article of this group address the problem of information rule set in which given a transaction database and its information rule set, how one can efficiently deal with insertion, deletion or modifications. To properly handle the updating of the discovered association rules, they propose two algorithms that allow updating of the rule set when the contents of database are modified. Their evaluation shows that their proposed techniques require less computational time which is due to a more efficient scanning of the database. And in the last article of this issue, Pietraszek discusses the problem of false alerts in intrusion detection systems and how supervised machine learning techniques can be applied for automated alert classification. The article explores the requirements for such a classification system and shows that despite its complexity, the problem is suited for the application of abstaining classifiers. The results demonstrate how one can significantly reduce the rates of false positives and false negatives while improving the overall misclassification costs.

And finally, the IDA-2007 conference that will be held in Slovenia this year is approaching. This bi-annual event will be from September 6–8, in the city of Ljubljana. We look forward to your contributions and attendance.

With our best wishes,

Dr. A. Famili  
*Editor-in-Chief*