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Editorial

Before the rapid appearance and growth of Internet bubble, before data mining's image being a true wealth generation path, R & D money and ventures related to the field of data analysis were aimed at projects that had a promise for long term benefits. The situation has changed now. The focus is not on long term goals and instead is on projects that aim at the finish line. To be more specific, the goal of most data analysis projects is how to use, enhance, and extend some of the best algorithms that have been developed so far to have a finish product. The demand is not just for science but a viable model of how to make the entire enterprise run more efficiently.

Volume 3(5) of IDA contains five articles that are directly related to the field of Intelligent Data Analysis and reflect some of the above thoughts.

In the first article, Kalousis and Theoharis introduce an approach to efficiently select a classification model and an algorithm to analyze large amounts of data. This is an important task in data mining in which performance of classifiers could be affected by data characteristics. The approach is based on use of background knowledge and performance evaluation of various classifiers in order to induce rules so that future selection processes can be performed more intelligently.

The second article, by Bui, Venkatesh and West, presents a new representation framework, called Layered Dynamic Probabilists Network, that could be used to handle uncertainty in data and represent spatial data at various levels of detail. Two of the advantages of this approach are: (i) reducing the size of spatial data and (ii) creating hierarchy of intervals to index temporal data.

In the third article, Hong, Kuo and Chi propose a new data mining algorithm to analyze quantitative data. The algorithm is based on integrating fuzzy set concepts and the a priori mining algorithm to discover interesting fuzzy association rules in transaction data sets. The approach assumes that the membership functions are known in advance.

The fourth article, by Jiang et al., contains a new data mining approach, called Latent Semantic Indexing (LSI), to analyse consumer data. The approach is an information retrieval method that can be used for textual documents. The paper also explores the applicability of an LSI model to numerical databases, such as consumer product data.

In the last article, Sobrino and Bravo introduce a knowledge discovery system that is intended to help the yield analysis expert to decide which corrective actions should be taken to improve the manufacturing process. The application is for a semiconductor manufacturing operation which is highly complex and yield improvement is extremely important. The system benefits from learning the tentative causes of low quality wafers from a large amount of manufacturing data.

And finally, we are currently working on publishing one or possibly two special issues of the IDA journal for the year 2000. We would like to hear your feedback about new topics in this field. Send us your feedback and we will work on it. Thank you.

A. Famili
Editor-in-Chief