Editorial

David Taniar

School of Business Systems, Monash University,
Clayton, Victoria 3800, Australia
E-mail: David.Taniar@infotech.monash.edu.au

Biographical notes: David Taniar holds a PhD degree in Computer Science, with a particular speciality in Databases. His research area has now expanded to Data Mining. He has published more than 30 journal papers and more than 100 conference papers. He has published six books, including the forthcoming 'Object-Oriented Oracle' (check the Amazon.com). Dr. Taniar is now with the School of Business Systems, Faculty of Information Technology, Monash University, Australia. He is an Editor-in-Chief of a number of international journals, and a Fellow of the Institute for Management Information Systems (FIMIS).

Business intelligence and data mining share many common issues. International Journal on Business Intelligence and Data Mining (IJBIDM) aims to stimulate the exchange of ideas and interaction between these related fields of interest. It is intended to be the premier technical publication in the field, providing a resource collection relevant common methods and techniques and a forum for unifying the diverse constituent research communities in business intelligence and intelligent data analysis. IJBIDM publishes and disseminates knowledge on an international basis in the areas of business intelligence, intelligent data analysis, and data mining. It provides a forum for state-of-the-art developments and research, as well as current innovative activities in business intelligence, data analysis and mining. In contrast to other journals, IJBIDM focuses on the application of data analysis and mining techniques in business applications.

Advances in data gathering, distribution and analysis have also created a need for an application of intelligent data analysis techniques to solve business modelling problems. Intelligent data analysis provides powerful and effective tools for problem solving in a variety of business modelling tasks. IJBIDM is devoted to intelligent techniques used for business modelling, including all areas of data visualisation, data pre-processing (fusion, editing, transformation, filtering, sampling), data engineering, data mining techniques, tools and applications, neurocomputing, evolutionary computing, fuzzy techniques, expert systems, knowledge filtering, and post-processing.

A summary of the scope of business intelligence and data mining includes:

- *Business intelligence.* Data extraction, reporting, cleaning, and pre-processing; OLAP; decision analysis, causal modelling, and uncertainty and noise in data; business intelligence cycle and model specification/selection/estimation; and web technology mining and agents.

- *Intelligent techniques.* Fuzzy, neural, and evolutionary approaches; genetic algorithms and machine learning; expert and hybrid systems; and other intelligent techniques.

- *Data analysis and data mining.* Data mining algorithms and processes; classification, projection, regression, and optimisation clustering; exploratory and automated data and knowledge-based analysis; statistical pattern recognition; information extraction and retrieval; and data visualisation.

- *Applications and tools.* Visualisation tools, human-computer interaction in intelligent data analysis, and business intelligence and data analysis systems and tools and applications.

The journal editorial board members are responsible for reviewing manuscripts. The members not only come from four different continents: Asia, Australia, Europe, and America, but also cover a broad range of expertise in business intelligence and data mining.

Following up a Call-For-Paper in early 2004, we have received numerous responses and submissions. Each paper was carefully reviewed, and eventually, eight papers were accepted for inclusion in this inaugural issue of the journal.

The first paper written by Chen and Liu from Brunel, UK, presents a review of data mining from an application-oriented view. They focus on four main application areas, namely bioinformatics, information retrieval, adaptive hypermedia, and electronic commerce. They also describe limitations and possible future trends in these areas.

The second paper, by Feng and Dillon from Twente (The Netherlands) and University of Technology Sydney (Australia), develops an XML-enabled data mining query language by extension of XQuery. The need for such a language is due to a large amount of data stored, presented, and exchanged using XML, and therefore, a language which provides an ability to extract knowledge from XML data sources for decision support becomes increasingly important and desirable.

The third and fourth papers focus on clustering. The third paper, by Bao Jun-Peng from China, concentrates on text-based clustering, where they apply the Heavy Frequency Vector (HFV) which considers only the most frequent words in a document. They argue that this method is easy to implement incremental clustering. The fourth paper, by Wang, Wu, and Zhang from the University of Technology Sydney and Vermont USA, combines K-Means with Support Vector Machine to build classifiers by reducing the number of support vectors.

The fifth paper, by Fu and Wang from Singapore, proposes a rule-extraction method based on a separability-correlation measure (SCM) ranking the importance of attributes. Based on the attribute ranking results, the best classification results can be determined, and these can further be used as inputs to a classifier.

The sixth paper, by Ngan, Lam, Wong, and Fu from the Chinese University of Hong Kong, is also in the data mining area. They address the problem of mining N-most interesting itemsets by using a tree structure when building co-occurrence frequent

itemsets. They conclude that their proposed method works well especially with a small number of itemsets.

The seventh paper, by Karacapilidis and Hatzieleftheriou from University of Patras in Greece, presents the use of fuzzy similarity measures in a hybrid recommendation framework. It basically combines the strengths of knowledge-based and collaborative filtering techniques. They demonstrate the applicability of their proposed approach through a web-based tool which provides recommendations about visiting various cities.

The last paper in this issue, by Hu et al, from Drexel University of Philadelphia and Memorial Solan-Kettering Cancer Center in New York, describes an application of data mining in clinical analysis. They apply a temporal rule induction algorithm to a set of cancer patients' clinical records which have been collected for 20 years. This paper describes how data mining techniques can be used in analysing clinical records and how data mining complements traditional statistic analysis. They also discover additional rules which were not previously discovered with statistical analysis.

In closing, I would like to thank all the members of the editorial board, and the Inderscience publisher, for making this journal possible. I would also like to thank the authors who have chosen this journal as a medium to publish their research results. I hope that readers will find these articles useful, informative, and innovative.