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Editorial

This recent issue is the second issue in the journal Transaction on Machine Learning and Data Mining. It presents three papers on hot topics in data mining such as clustering, frequent item set mining and association rules. All the new developed algorithms are evaluated on real applications in medicine, technical diagnosis, and computer networks.

Clustering methods are important methods in knowledge discovery. Most of the methods are able to group similar samples together but do not give any explanation about the concepts of the groups. The paper of Fornells et. al faces on this aspect. They developed a novel knowledge discovering method that combines clustering based on self-organizing maps and generalization methods based on the anti-unification concept and applied it to an important problem in medicine such as skin cancer diagnosis. This method does not only present to an medical expert what lesion data samples belong to the same group it also gives the medical expert an explanation what features and feature range make them similar. The method is a further step towards adapting intelligent systems to the users need.

Monitoring frequent items in a distributed network is the main issue in the second paper by Fuller and Kantardzic. The solution requires to minimize communication overhead and to consider computation constraints such as memory. They call their approach the FIDS monitoring system which is heavily influenced by Top-K Monitoring.

The third paper deals with association rule mining by using a new evaluation measure for the extracted association rules called Relative-Linkage Disequilibrium (RLD). RLD can be considered an adaptation of the lift measure with the advantage that it presents more effectively the deviation of the support of the whole rule from the support expected under independence. The RLD results in a powerful graphical display of association relationships that has explanation capability to a domain expert. The advantage of this approach is shown in two applications: one data set consists of 2008 aircraft accident and recorded in the FAA data base.

All the developments in these three papers take into account the specific needs of the particular applications. They face on the users needs or on the systems requirements. The main intension is to have computerized methods that can be the basis of real intelligent systems in practice.

October, 2008

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Editor