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Petra Perner (Ed.)

# Advances in Data Mining

Applications in E-Commerce, Medicine,  
and Knowledge Management



Springer

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## **Preface**

This book presents papers describing selected projects on the topic of data mining in fields like e-commerce, medicine, and knowledge management. The objective is to report on current results and at the same time to give a review on the present activities in this field in Germany. An effort has been made to include the latest scientific results, as well as lead the reader to the various fields of activity and the problems related to them.

Knowledge discovery on the basis of web data is a wide and fast-growing area. E-commerce is the principal theme of motivation in this field, as companies invest large sums in the electronic market, in order to maximize their profits and minimize their risks. Other applications are telelearning, teleteaching, service support, and citizen-information systems. Concerning these applications, there is a great need to understand and support the user by means of recommendation systems, adaptive information systems, as well as by personalization. In this respect Giudici and Blanc present in their paper procedures for the generation of associative models from the tracking behavior of the user. Perner and Fiss present in their paper a strategy for intelligent e-marketing with web mining and personalization. Methods and procedures for the generation of associative rules are presented in the paper by Hipp, Güntzer, and Nakhaeidizadeh.

The fast increase in information from the Human Genome Project on the one hand and new methods of genome-wide differential expression analysis, target-oriented manipulation of signal paths, and proteome research on the other hand has made it possible to study, far beyond a linear presentation of individual signal paths, the complex processing of signals in cells and their physiological as well pathophysiological importance. For the evaluation of the data generated, increasingly intelligent evaluation procedures are needed. Glass and Karopka describe in their paper methods for the evaluation of genomic expression data based on case-based reasoning. Another medical approach based on case-based reasoning for the prognosis of threatening influenza waves is described in the paper by Schmidt and Gierl.

Besides all cultural aspects, the field of knowledge management is especially concerned with the acquisition and extraction of knowledge from various sources and for different purposes. Data mining is an approach that very well supplements other knowledge management techniques. It enables automated knowledge extraction and evaluation from data bases, from intra-/internet, and from documents. Althoff et al. describe in their paper results of the indiGo project for experience management and process learning and compare their results to related work on knowledge management.

All papers were presented at the second Industrial Conference on Data Mining ICDM 2002 in Leipzig. We would like to thank all those who contributed to this special event.

May 2002

Petra Perner

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