

Petra Perner (Ed.)

Advances in Data Mining

16th Industrial Conference, ICDM 2016
New York, USA, July 2016

Poster Proceedings

ibai Publishing

www.ibai-publishing.org

The German National Library listed this publication in the German National Bibliography.
Detailed bibliographical data can be downloaded from <http://dnb.ddb.de>.

ibai-publishing
Prof. Dr. Petra Perner
Schulstraße 13a
04617 Fockendorf, Germany
E-mail: info@ibai-publishing.org
<http://www.ibai-publishing.org>

Copyright © 2016 ibai-publishing
ISSN 1864-9734
ISBN 978-3-942952-42-2

All rights reserved.

Printed in Germany, 2016

Preface

The sixteenth event of the Industrial Conference on Data Mining ICDM was held in New York (www.data-mining-forum.de) running under the umbrella of the World Congress on “The Frontiers in Intelligent Data and Signal Analysis, DSA 2016” (www.worldcongressdsa.com).

After the peer-review process, we accepted 32 high-quality papers for oral presentation. The topics range from theoretical aspects of data mining to applications of data mining, such as in multimedia data, in marketing, in medicine, and in process control, industry, and society. Extended versions of selected papers will appear in the international journal *Transactions on Machine Learning and Data Mining* (www.ibai-publishing.org/journal/mldm).

In all, ten papers were selected for poster presentations and six for industry paper presentations, which are published in the ICDM Poster and Industry Proceeding by ibai-publishing (www.ibai-publishing.org).

A tutorial on Data Mining, a tutorial on Case-Based Reasoning, a tutorial on Intelligent Image Interpretation and Computer Vision in Medicine, Biotechnology, Chemistry and Food Industry, and a tutorial on Standardization in Immunofluorescence were held before the conference.

We were pleased to give out the best paper award for ICDM for the eight times this year. There are three announcements mentioned at www.data-mining-forum.de. The final decision was made by the Best Paper Award Committee based on the presentation by the authors and the discussion with the auditorium. The ceremony took place during the conference. This prize is sponsored by ibai solutions (www.ibai-solutions.de), one of the leading companies in data mining for marketing, Web mining, and e-commerce.

We would like to thank all reviewers for their highly professional work and their effort in reviewing the papers.

We also thank the members of the Institute of Applied Computer Sciences, Leipzig, Germany (www.ibai-institut.de), who handled the conference as secretariat. We appreciate the help and understanding of the editorial staff at Springer Verlag, and in particular Alfred Hofmann, who supported the publication of these proceedings in the LNAI series.

Last, but not least, we wish to thank all the speakers and participants who contributed to the success of the conference. We hope to see you in 2017 in New York at the next World Congress on “The Frontiers in Intelligent Data and Signal Analysis, DSA 2017” (www.worldcongressdsa.com), which combines under its roof the following three events: International Conferences Machine Learning and Data Mining, MLDM, the Industrial Conference on Data Mining, ICDM, and the International Conference on Mass Data Analysis of Signals and Images in Medicine, Biotechnology, Chemistry and Food Industry, MDA.

July 2016

Petra Perner

Organizations

Chair

Petra Perner

IBaI Leipzig, Germany

Program Committee

Ajith Abraham

Machine Intelligence Research Labs, USA

Brigitte Bartsch-Spörl

BSR Consulting GmbH, Germany

Orlando Belo

University of Minho, Portugal

Shirley Coleman

University of Newcastle, UK

Jeroen de Bruin

Medical University of Vienna, Austria

Antonio Dourado

University of Coimbra, Portugal

Geert Gins

KU Leuven, Belgium

Warwick Graco

ATO, Australia

Aleksandra Gruca

Silesian University of Technology, Poland

Hartmut Ilgner

Council for Scientific and Industrial Research,
South Africa

Pedro Isaias

Universidade Aberta, Portugal

Piotr Jedrzejowicz

Gdynia Maritime University, Poland

Martti Juhola

University of Tampere, Finland

Janusz Kacprzyk

Polish Academy of Sciences, Poland

Mehmed Kantardzic

University of Louisville, USA

Mineichi Kudo

Hokkaido University, Japan

Eduardo F. Morales

INAOE, Ciencias Computacionales, Mexico

Armand Prieditris

Newstar Labs, USA

Rainer Schmidt

University of Rostock, Germany

Victor Sheng

University of Central Arkansas, USA

Kaoru Shimada

Section of Medical Statistics, Fukuoka Dental
College, Japan

Gero Szepannek

Santander Consumer Bank, Germany

Additional Reviewers

Alessandro Mammana

Max Planck Institute for Molecular Genetics

Juliane Perner

Cancer Research UK Cambridge Institute

Table of Contents

Attribute analysis of flakes from stone inventories: techniques1 to study the Older Palaeolithic periods <i>Thomas Weber</i>	
Exploiting the Low-Volatility Anomaly by Optimizing Historical11 Portfolio Volatility <i>Phil Maguirea, Stephen Kellya, Robert Millera, Philippe Mosera, Rebecca Maguireb, and Philip Hyland</i>	
Category Trend Analysis: Discovering the Top Relevant Trends in26 Your Data <i>Alina Maor and Renato Keshet</i>	
An Application on Educational Data Mining: Analyzing High41 School Performances in Terms of Academic Programs' Success in Non Commissioned Officer College <i>Abdullah Topçu</i>	
Applicability of Latent Dirichlet Allocation for Company Modeling.....55 <i>Katsiaryna Mirylenka, Christoph Miksovic, and Paolo Scotton</i>	
Credit Scoring Based on Ensemble Learning: The Case of60 Sudanese Banks <i>Omayma Husain Abbas, Eiman Kambal</i>	
Market condition based trading rule generation and parameter75 estimation using Genetic Algorithm <i>Manish Gupta</i>	
Prediction of Social Trends Using Nearest Neighbors Time Series87 Matching and Semantic Similarity. <i>Sarah Elkasrawi, Hussein Elwy, Stephan Baumann, Christian Reuschling, and Andreas Dengel</i>	
ICDM Long Paper (late)	
Adaptive controller based on Sigmoid-RBF for contact force101 testing machine <i>Chidentree Treesatayapun and Arturo Baltazar</i>	
Author Index	116