



DATA ANALYTICS 2012

The First International Conference on Data Analytics

September 23-28, 2012

Barcelona, Spain

DATA ANALYTICS 2012 Editors

Sandjai Bhulai, VU University Amsterdam, The Netherlands

Joseph Zernik, Human Rights Alert (NGO), USA

Petre Dini, Concordia University, Canada / China Space Agency Center, China

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2012) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed by Curran Associates, Inc. (2012)

International Academy, Research, and Industry Association (IARIA)
412 Derby Way
Wilmington, DE 19810

Phone: (408) 893-6407
Fax: (408) 527-6351

petre@aria.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

DATA ANALYTICS 1: TARGET ANALYTICS

Complexity Analysis in the Language of Information Technology Companies.....	1
<i>Mary Luz Mouronte López</i>	
How to Find Important Users in a Web Community? Mining Similarity Graphs.....	10
<i>Clemens Schefels</i>	
Characterization of Network Traffic Data: A Data Preprocessing and Data Mining Application.....	18
<i>Esra Kahya-Özyirmidokuz, Ali Gezer, Cebraill Ciflikli</i>	
Structured Data and Source Code Analysis for Financial Fraud Investigations.....	24
<i>Joe Sremack</i>	

DATA ANALYTICS 2: APPLICATION-ORIENTED ANALYTICS I

Integrity, or Lack Thereof, of the Electronic Record Systems of the Courts of the State of Israel.....	31
<i>Joseph Zernik</i>	
Network Visualization of Car Inspection Data using Graph Layout	39
<i>Jaakko Talonen, Miki Sirola, Mika Sulkava</i>	
Trend Visualization on Twitter: What's Hot and What's Not?	43
<i>Sandjai Bhulai, Peter Kampstra, Lidewij Kooiman, Ger Koole, Marijn Deurloo, Bert Kok</i>	
Travel Time Estimation Results with Supervised Non-parametric Machine Learning Algorithms.....	49
<i>Ivana Cavar, Zvonko Kavran, Ruder Michael Rapajic</i>	
Automated Predictive Assessment from Unstructured Student Writing	57
<i>Norma C. Ming, Vivienne Ming</i>	

DATA ANALYTICS 3: APPLICATION-ORIENTED ANALYTICS II

Building OLAP Data Analytics by Storing Path-Enumeration Keys into Sorted Sets of Key-Value Store Databases.....	61
<i>Luis Loyola, Fernando Wong, Daniel Pereira</i>	
Ontology-Guided Data Acquisition and Analysis	71
<i>Dominic Girardi, Klaus Arthofer, Michael Giretzlehner</i>	
Analysis of Streaming Service Quality Using Data Analytics of Network Parameters.....	76
<i>Jie Zhang, Hwa-Jong Kim, Doo-Heon Ahn</i>	
Modeling Team-Compatibility Factors Using a Semi-Markov Decision Process: A Data-Driven Framework for Performance Analysis in Soccer	80
<i>Ali Jarvandi, Shahram Sarkani, Thomas Mazzuchi</i>	
Design and Operation of the Electronic Record Systems of the US Courts are Linked to Failing Banking Regulation	83
<i>Joseph Zernik</i>	

DATA ANALYTICS 4: FUNDAMENTALS FOR DATA ANALYTICS

The Open Data Interface (ODI) Framework for Public Utilization of Big Data	94
<i>Hwa-Jong Kim, Seung-Teak Lee, Yi-Chul Kang</i>	
Evaluating Data Minability Through Compression - An Experimental Study	97
<i>Dan Simovici, Dan Pletea, Saaid Baraty</i>	
A New Measure of Rule Importance Using Hellinger Divergence.....	103
<i>Chang-Hwan Lee</i>	
An Architecture for Semantically Enriched Data Stream Mining	107
<i>Andreas Textor, Fabian Meyer, Marcus Thoss, Jan Schaefer, Reinhold Kroeger, Michael Frey</i>	
Extraction and Visualisation of Semantic Concepts from Document-Sets using Taxonomies (POSTER)	N/A
<i>Andreas Schmidt, Daniel Kimmig, Robert Senger</i>	
Author Index	