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Intelligent Data Engineering and Automated Learning – IDEAL 2015

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Proceedings

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Preface

We are living in a digital world surrounded by various data from numerous sources. Each enterprise collects huge amounts of data; however, manual analysis of these data is virtually impossible. Therefore, one of the timely topics of contemporary computer science is the analytics of big data described by the so-called 4Vs (volume, velocity, variety, and veracity). Nevertheless, we should also think about the fifth and most important V (value), because having access to big data is important, but unless we can turn it into value, it is useless.

The IDEAL conference attracts international experts, researchers, leading academics, practitioners and industrialists from the fields of machine learning, computational intelligence, data mining, knowledge management, biology, neuroscience, bio-inspired systems and agents, and distributed systems. It has enjoyed a vibrant and successful history in the last 17 years and over 12 locations in eight different countries. It continues to evolve to embrace emerging topics and exciting trends, especially in this big data era.

This year IDEAL took place in the vibrant city of Wroclaw, Poland. There were about 127 submissions, which were rigorously peer-reviewed by the Program Committee members. Only the papers judged to be of the highest quality were accepted and included in these proceedings.

This volume contains over 60 papers accepted and presented at the 16th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL 2015), held during October 14–16, 2015, in Wroclaw, Poland. These papers provide a valuable collection of the latest research outcomes in data engineering and automated learning, from methodologies, frameworks and techniques to applications. In addition to various topics such as evolutionary algorithms, neural networks, probabilistic modeling, swarm intelligent, multi-objective optimization, and practical applications in regression, classification, clustering, biological data processing, text processing, and video analysis, IDEAL 2015 also featured a number of special sessions on several emerging topics such as computational intelligence for optimization of communication networks, discovering knowledge from data, simulation-driven DES-like modeling and performance evaluation, and intelligent applications in real-world problems.

IDEAL 2015 enjoyed outstanding keynote speeches by distinguished guest speakers: Prof. Manuel Grana of the University of the Basque Country (Spain), Prof. Leszek Rutkowski of Czestochowa University of Technology (Poland), Prof. Vaclav Snasel of VSB-Technical University of Ostrava (Czech Republic), Prof. Jerzy Stefanowski of Poznań University of Technology (Poland), and Prof. Xin Yao of the University of Birmingham (UK).

We would like to thank all the people who devoted so much time and effort to the successful running of the conference, in particular the members of the Program Committee and reviewers, as well as the authors who contributed to the conference. We are also very grateful to the hard work by the local organizing team at the Department

of Systems and Computer Networks, Faculty of Electronics, Wrocław University of Technology, especially Dr. Konrad Jackowski and Dr. Robert Burduk, for local arrangements, as well as the help of the University of Manchester in various stages. The continued support and collaboration from Springer, in particular from Alfred Hoffman and Anna Kramer, are also greatly appreciated.

July 2015

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