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# Preface

This volume constitutes the proceedings of the 11th International Conference on Artificial Intelligence and Soft Computing, ICAISC 2012, held in Zakopane, Poland, from April 29 to May 3, 2012. The conference was organized by the Polish Neural Network Society in cooperation with the SWSPiZ Academy of Management in Łódź, the Department of Computer Engineering at the Czestochowa University of Technology, and the IEEE Computational Intelligence Society, Poland Chapter. The previous conferences took place in Kule (1994), Szczyrk (1996), Kule (1997) and Zakopane (1999, 2000, 2002, 2004, 2006, 2008, 2010) and attracted a large number of papers and internationally recognized speakers: Lotfi A. Zadeh, Igor Aizenberg, Shun-ichi Amari, Daniel Amit, Piero P. Bonissone, Jim Bezdek, Zdzislaw Bubnicki, Andrzej Cichocki, Wlodzislaw Duch, Pablo A. Estévez, Jerzy Grzymala-Busse, Martin Hagan, Akira Hirose, Kaoru Hirota, Janusz Kacprzyk, Jim Keller, Laszlo T. Koczy, Soo-Young Lee, Robert Marks, Evangelia Micheli-Tzanakou, Erkki Oja, Witold Pedrycz, Jagath C. Rajapakse, Sarunas Raudys, Enrique Ruspini, Jorg Siekman, Roman Slowinski, Igor Spiridonov, Ryszard Tadeusiewicz, Shiro Usui, Jun Wang, Ronald Y. Yager, Syozo Yasui and Jacek Zurada. The aim of this conference is to build a bridge between traditional artificial intelligence techniques and novel soft computing techniques. It was pointed out by Lotfi A. Zadeh that "soft computing (SC) is a coalition of methodologies which are oriented toward the conception and design of information/intelligent systems. The principal members of the coalition are: fuzzy logic (FL), neurocomputing (NC), evolutionary computing (EC), probabilistic computing (PC), chaotic computing (CC), and machine learning (ML). The constituent methodologies of SC are, for the most part, complementary and synergistic rather than competitive." This volume presents both traditional artificial intelligence methods and soft computing techniques. Our goal is to bring together scientists representing both traditional artificial intelligence approach and soft computing techniques. This volume is divided into five parts:

- Neural Networks and Their Applications
- Fuzzy Systems and Their Applications
- Pattern Classification
- Computer Vision, Image and Speech Analysis
- The 4th International Workshop on Engineering Knowledge and Semantic Systems

The conference attracted a total of 483 submissions from 48 countries and after the review process 212 papers were accepted for publication. ICAISC 2012 hosted the Symposium on Swarm Intelligence and Differential Evolution, the Symposium on Evolutionary Computation and the 4th International Workshop on Engineering Knowledge and Semantic Systems (IWEKSS 2012). A special theme of IWEKSS 2012 was "Nature-Inspired Knowledge Management Systems."

I would like to thank two main IWEKS 2012 organizers: Jason J. Jung from Korea and Dariusz Krol from Poland. I would also like to thank our participants, invited speakers and reviewers of the papers for their scientific and personal contribution to the conference. Several reviewers were very helpful in reviewing the papers and are listed herein.

## Acknowledge

Finally, I thank my co-workers Łukasz Bartczuk, Agnieszka Cpałka, Piotr Dziwiński, Marcin Gabryel, Marcin Korytkowski and the conference secretary Rafał Scherer, for their enormous efforts to make the conference a very successful event. Moreover, I would like to acknowledge the work of Marcin Korytkowski, who designed the Internet submission system and Patryk Najgebauer, Tomasz Nowak and Jakub Romanowski who created the web page.

April 2012 Leszek Rutkowski

# Organization

ICAISC 2012 was organized by the Polish Neural Network Society in cooperation with the SWSPiZ Academy of Management in Łódź, the Department of Computer Engineering at Częstochowa University of Technology, and the IEEE Computational Intelligence Society, Poland Chapter.

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