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Hybrid Artificial Intelligent Systems

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Preface

This volume of *Lecture Notes in Artificial Intelligence* (LNAI) includes the papers accepted for presentation at HAIS 2016 – the 11th International Conference on Hybrid Artificial Intelligence Systems – held in the beautiful city of Seville, Spain, in April 2016.

The International Conference on Hybrid Artificial Intelligence Systems has become a unique, established, and broad interdisciplinary forum for researchers an practitioners who are involved in developing and applying symbolic and sub-symbolic techniques aimed at the construction of highly robust and reliable problem-solving techniques and at bringing the most relevant achievements in this field.

Hybridization of intelligent techniques, coming from different computational intelligence areas, has become popular because of the growing awareness that such combinations frequently perform better than individual techniques such as neurocomputing, fuzzy systems, rough sets, evolutionary algorithms, agents and multiagent systems, etc.

Practical experience has indicated that hybrid intelligence techniques might be helpful for solving some of the challenging real-world problems. In a hybrid intelligence system, a synergistic combination of multiple techniques is used to build an efficient solution to deal with a particular problem. This is, thus, the setting of the HAIS conference series, and its increasing success is the proof of the vitality of this exciting field.

HAIS 2016 received more than 150 technical submissions. After a rigorous peer-review process, the international Program Committee selected 63 papers, which are published in this conference proceedings.

The selection of papers was extremely rigorous in order to maintain the high quality of the conference and we would like to thank the Program Committee for their hard work in the reviewing process. This process is very important to the creation of a conference of high standard and the HAIS conference would not exist without their help.

The large number of submissions is certainly not only to testimony to the vitality and attractiveness of the field but an indicator of the interest in the HAIS conferences themselves.

HAIS 2016 enjoyed outstanding keynote speeches by distinguished guest speakers: Prof. João Gama – University of Porto (Portugal); Prof. Bogusław Cyganek – Visiting Professor at Wroclaw University of Technology (Poland) and Associate Professor at AGH University of Science and Technology (Poland); and Prof. Richard Duro – University of A Coruña (Spain).

Moreover, HAIS 2016 has teamed up with *Neurocomputing* (Elsevier), *BioData Mining* (BioMed Central), and the *Logic Journal of the IGPL* (Oxford Journals) for a set of special issues including selected papers from HAIS 2016.

Particular thanks also go to the conference's main sponsors, ENGINE — European Research Centre of Network Intelligence for Innovation Enhancement (http://engine.pwr.edu.pl) sponsored by EC under FP7Coordination and Support Action (Grant Agreement Number 316097), IEEE — Spanish Section, IEEE Systems, Man and Cybernetics — Spanish Chapter, Universidad Pablo de Olavide, University of Salamanca, and The International Federation for Computational Logic, who jointly contributed in an active and constructive manner to the success of this initiative.

We would like to thank Alfred Hofmann and Anna Kramer from Springer for their help and collaboration during this demanding publication project.

April 2016

Francisco Martínez-Álvarez
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