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Hybrid Artificial Intelligent Systems

12th International Conference, HAIS 2017
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Proceedings

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Preface

This volume of *Lecture Notes in Artificial Intelligence* (LNAI) includes the papers presented at HAIS 2017 held in the beautiful city of Logroño (La Rioja), Spain, in June 2017.

The International Conference on Hybrid Artificial Intelligence Systems (HAIS), has become a unique, established, and broad interdisciplinary forum for researchers and 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 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 the 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 2017, the 12th event in the series, received more than 130 technical submissions. After a rigorous peer-review process, the international Program Committee selected 60 papers, which are published in these 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 testimony to the vitality and attractiveness of the field but an indicator of the interest in the HAIS conferences themselves.

HAIS 2017 enjoyed outstanding keynote speeches by distinguished guest speakers: Prof. Bartosz Krawczyk, assistant professor in the Department of Computer Science, Virginia Commonwealth University, USA, and Dr. Dario Izzo, scientific coordinator of the Advanced Concepts Team in the European Space Agency.

HAIS 2017 has teamed up with *Neurocomputing* (Elsevier) and the *Logic Journal of the IGPL* (Oxford journals) for a suite of special issues including selected papers from HAIS 2017.

Particular thanks go to the main sponsors of the conference, Startup OLE, COESI, the Office of Innovation, Labour, Industry and Commerce of the Government of La Rioja, the Office of Culture and Tourism of the Government of La Rioja, the University of

La Rioja, the Foundation of the University of La Rioja, the 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.

June 2017

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