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Emilio Corchado Ajith Abraham
Witold Pedrycz (Eds.)

Hybrid Artificial Intelligence Systems

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Preface

The Third International Workshop on Hybrid Artificial Intelligence Systems (HAIS 2008) presented the most recent developments in the dynamically expanding realm of symbolic and sub-symbolic techniques aimed at the construction of highly robust and reliable problem-solving techniques. Hybrid intelligent systems have become increasingly popular given their capabilities to handle a broad spectrum of real-world complex problems which come with inherent imprecision, uncertainty and vagueness, high-dimensionality, and non stationarity. These systems provide us with the opportunity to exploit existing domain knowledge as well as raw data to come up with promising solutions in an effective manner. Being truly multidisciplinary, the series of HAIS workshops offers a unique research forum to present and discuss the latest theoretical advances and real-world applications in this exciting research field.

This volume of *Lecture Notes on Artificial Intelligence* (LNAI) includes accepted papers presented at HAIS 2008 held in University of Burgos, Burgos, Spain, September 2008

The global purpose of HAIS conferences has been to form a broad and interdisciplinary forum for hybrid artificial intelligence systems and associated learning paradigms, which are playing increasingly important roles in a large number of application areas.

Since its first edition in Brazil in 2006, HAIS has become an important forum for researchers working on fundamental and theoretical aspects of hybrid artificial intelligence systems based on the use of agents and multiagent systems, bioinformatics and bio-inspired models, fuzzy systems, artificial vision, artificial neural networks, optimization models and alike.

This conference featured a number of special sessions: Hybrid Systems Based on Negotiation and Social Network Modelling, Real-World Applications of HAIS Under Uncertainty, Hybrid Intelligent Systems for Multi-robot and Multi-agent Systems, Genetic Fuzzy Systems: Novel Approaches and Applications of Hybrid Artificial Intelligence in Bioinformatics.

HAIS 2008 received over 280 technical submissions. After a thorough peer-review process, the International Program Committee selected 93 papers which are published in this conference proceedings. The large number of submissions is certainly not only a testimony of the vitality and attractiveness of the field but an indicator of the interest in the HAIS conferences themselves.

As a follow-up of the conference, we anticipate further publication of selected papers in special issues scheduled for the journal of *Information Sciences*, Elsevier Sciences, The Netherlands and the *International Journal On Computational Intelligence Research* (IJCIR). We would like to express our thanks to the Program Committee whose members did an outstanding job under a very tight schedule. Our thanks go to the keynote speakers: Bogdan Gabrys from Bournemouth University (UK), Francisco Herrera from the University of Granada (Spain), Xindong Wu from the University of Vermont (USA), and Hujun Yin from the University of Manchester (UK).

We wish to thank the staff of Springer for their help and collaboration during this demanding publication project. We would like to fully acknowledge the support we received from Junta de Castilla y León, Genoma España, University of Burgos, Fundación General de la Universidad de Burgos, and Ayuntamiento de Burgos y Diputación de Burgos.

September 2008

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