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Hybrid Artificial Intelligent Systems

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Preface

This volume of *Lecture Notes on Artificial Intelligence* (LNAI) includes accepted papers presented at the 15th International Conference on Hybrid Artificial Intelligence Systems (HAIS 2020), held in the beautiful city of Gijón, Spain, November 2020.

HAIS has become an 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 bringing the most relevant achievements in this field.

The 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, deep learning, and so on.

Practical experience has indicated that hybrid intelligence techniques might be helpful to solve 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.

The HAIS 2020 International Program Committee selected 65 papers, which are published in this conference proceedings, yielding an acceptance ratio of about 62%.

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 in creating a conference of high standard and the HAIS conference would not exist without their help.

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

HAIS 2020 enjoyed outstanding keynote speeches by distinguished guest speakers: Prof. Antonio Bahamonde – Professor in the Department of Computer Science, University of Oviedo, Spain, and Prof. Sara Silva – Professor in the Large Scale Computer Systems Laboratory (LASIGE), University of Lisbon, Portugal.

HAIS 2020 has teamed up with the *Neurocomputing* (Elsevier) and the *Logic Journal of the IGPL* (Oxford Journals) journals for a suite of special issues including selected papers from HAIS 2020.

Particular thanks go as well to the conference's main sponsors, Startup OLE, the University of Oviedo, the Government of Principado de Asturias, the Government of the local council of Gijón, the Computer Science Department at University of Oviedo, the University of Salamanca, IBERIA, RENFE, ALSA, 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 Hoffman and Anna Kramer from Springer for their help and collaboration during this demanding publication project.

Finally, we would like to thank the authors and, again, the Program Committee, for their support and comprehension during the COVID-19 pandemic and their total collaboration: they helped us in keeping on with the conference. Also, a special memorial to all the people that suffered from this horrendous pandemic.

November 2020

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