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# Advances in Artificial Intelligence – IBERAMIA 2014

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Proceedings

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# Preface

IBERAMIA is the biennial Ibero-American Conference on Artificial Intelligence (AI). In 2014, IBERAMIA was held in Santiago (Chile), from November 24 to 27. This conference is supported by the main Ibero-American societies of artificial intelligence, and provides researchers from Portugal, Spain, and countries in Latin America the opportunity to meet AI researchers from all over the world. Since its first edition (Barcelona, 1988), IBERAMIA has expanded its scope to become a well-recognized international conference in the AI field, with papers published in English by Springer in the LNCS/LNAI series since the sixth edition (Lisbon, 1998).

The technical structure of the conference is composed of the main technical sessions, keynote talks, and workshops.

The organizational structure of the scientific program of IBERAMIA is as follows: the conference is organized along several areas of AI and computational intelligence, each coordinated by two or three Area Chairs (ACs) who are experts in a particular area. ACs are responsible to select the Program Committee (PC) members. In total, IBERAMIA has involved 34 ACs, almost 300 PC members (from 30 countries, including 19 that are outside the Ibero-American geographical area), and an extra number of additional reviewers. Their names appear on pages VII, IX, and XVII respectively.

This year we have introduced one innovation, which is to try to provide as much feedback as possible to authors by doing our best to have each paper reviewed by more than four reviewers. We have succeeded in this task in more than 50% of the papers, as shown in Table 1.

**Table 1.** Number of reviews per paper

Number of reviews per paper	Number of papers
2	1
3	56
4	41
5	35
6	3

IBERAMIA 2014 received 136 submissions from 27 countries (among these, 16 are not within the Ibero-American area). From the total, 64 were accepted for presentation and publication in this volume. Statistics per area are shown in Table 2. We believe that this volume represents a fine contribution to the current research on several areas of AI.

**Table 2.** Papers by area

Area	Submissions	Accepted	Acceptance Rate
Agent-based modeling and simulation	6	2	0.33
AI in education, affective computing, and human-computer interaction	7	4	0.57
Ambient intelligence	3	3	1.00
Applications of AI	14	6	0.43
Bio-inspired computing	12	7	0.58
Computer vision	2	-	0.00
Fuzzy systems	3	2	0.67
Information and knowledge processing/ knowledge discovery and data mining	11	5	0.45
Knowledge engineering, knowledge representation and probabilistic reasoning	8	3	0.38
Machine learning	11	6	0.55
Multi-agent systems	12	4	0.33
Natural language processing	19	5	0.26
Papers from area chairs	16	11	0.69
Planning and scheduling	3	1	0.33
Robotics	9	5	0.56

The editors would like to thank: the authors for submitting their work to IBERAMIA; the Area Chairs, Program Committee members, and additional reviewers for their hard work and valuable time; the sponsors; and Springer Verlag for agreeing to print this volume.

We also thank our keynote speakers: Professor Guillermo Simari (Universidad Nacional del Sur in Bahia Blanca, Argentina), Professor Blai Bonet (Universidad Simón Bolívar, Venezuela), and Pavlos Protopapas (University of Pennsylvania, USA).

Thanks also to the IBERAMIA executive committee and to the secretariat for its guidance and support, the team responsible for maintaining the website, and the local organizers as well as the Pontificia Universidad Católica, Chile.

Ana L.C. Bazzan  
Karim Pichara

# Organization

IBERAMIA 204 was organized by the Pontifica Universidad Católica, Chile. The conference was sponsored by the main Ibero-American artificial intelligence and computer science societies:

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Associação Portuguesa para Inteligência Artificial	APPIA
Asociación Española de Inteligencia Artificial	AEPIA
Sociedad Argentina de Informática	SADIO
Sociedad Colombiana de Computacion	SCC
Sociedad Cubana de Matemática y Computación	SCMC
Sociedad Iberoamericana de Inteligencia Artificial	IBERAMIA
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Sociedade Brasileira de Computação	SBC
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