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Francisco J. Garijo
Telefónica Investigación y Desarrollo
Emilio Vargas 6, 28043 Madrid, Spain
E-mail: fgarijo@tid.es

José C. Riquelme
Miguel Toro
Universidad de Sevilla, ETS Ingeniería Informática
Dpto. Lenguajes y Sistemas Informáticos
41012 Seville, Spain
E-mail: {riquelme,mtoro}@lsi.us.es

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Preface

The 8th Ibero-American Conference on Artificial Intelligence, IBERAMIA 2002, took place in Spain for the second time in 14 years; the first conference was organized in Barcelona in January 1988.

The city of Seville hosted this 8th conference, giving the participants the opportunity of enjoying the richness of its historical and cultural atmosphere.

Looking back over these 14 years, key aspects of the conference, such as its structure, organization, the quantity and quality of submissions, the publication policy, and the number of attendants, have significantly changed. Some data taken from IBERAMIA'88 and IBERAMIA 2002 may help to illustrate these changes.

IBERAMIA'88 was planned as an initiative of three Ibero-American AI associations: the Spanish Association for AI (AEPIA), the Mexican Association for AI (SMIA), and the Portuguese Association for AI (APIA). The conference was organized by the AEPIA staff, including the AEPIA president, José Cuena, the secretary, Felisa Verdejo, and other members of the AEPIA board.

The proceedings of IBERAMIA'88 contain 22 full papers grouped into six areas: knowledge representation and reasoning, learning, AI tools, expert systems, language, and vision. Papers were written in the native languages of the participants: Spanish, Portuguese, and Catalan. Twenty extended abstracts describing ongoing projects were also included in the proceedings.

IBERAMIA 2002 was organized as an initiative of the Executive Committee of IBERAMIA. This committee is in charge of the planning and supervision of IBERAMIA conferences. Its members are elected by the IBERAMIA board which itself is made up of representatives from the following Ibero-American associations: AEPIA (Spain), APPIA (Portugal), AVINTA (Venezuela), SBC (Brazil), SMIA (Mexico), and SMCC (Cuba).

The organizational structure of IBERAMIA 2002 is similar to other international scientific conferences. The backbone of the conference is the scientific program, which is complemented by tutorials, workshops, and open debates on the principal topics of AI.

An innovative characteristic, which differentiates IBERAMIA from other international conferences, is the division of the scientific program into two sections, each with different publication requirements. The paper section is composed of invited talks and presentations of the contributions selected by the PC. Since the 6th conference held in Lisbon in 1998, Springer-Verlag has published the proceedings of the papers section in English as part of the LNAI series.

The open discussion section is composed of working sessions devoted to the presentation of ongoing research being undertaken in Ibero-American countries, and to the discussion of current research issues in AI. Selected papers here are written either in Spanish, Portuguese, or English. The proceedings are published in a local edition.

A total of 345 papers were submitted to IBERAMIA 2002 from 28 different countries, 316 papers submitted to the paper section and the remaining 29 papers to the open discussion section. The number of papers per country and section are shown in the following table:

Country	Paper Section	Open Section	Country	Paper Section	Open Section
Algeria	3		Mexico	21	6
Argentina	2		Peru	1	
Australia	1		Poland	3	
Austria	1		Portugal	20	
Brazil	25	5	Ireland	1	
Canada	3		Romania	2	
Cuba	1		Russia	1	
Chile	3		Slovakia	1	
China	1		Spain	187	17
France	14		The Netherlands	1	
Germany	3		Tunisia	1	
India	2		UK	4	
Italy	3		USA	1	
Japan	1		Venezuela	8	1

Of the 316 papers submitted to the paper section, only 97 papers were selected for publication in the proceedings. The AI topics covered by the submitted papers and the papers accepted can be seen in the following table:

Topic	Submitted	Accepted
Knowledge Representation and Reasoning	66	19
Machine Learning	18	6
Uncertainty and Fuzzy Systems	23	7
Genetic Algorithms	31	9
Neural Nets	38	15
Knowledge Engineering and Applications	3	0
Distributed Artificial Intelligence and Multi-Agent Systems	42	9
Natural Language Processing	33	9
Intelligent Tutoring Systems	13	5
Control and Real time	23	8
Robotics	19	6
Computer Vision	8	4
Total	317	97

The quantity and the quality of the submissions to IBERAMIA have improved since 1988. Furthermore, the number of submissions for the paper section in IBERAMIA 2002 was significantly higher than those of previous conferences. We received 316 submissions, 97 of them (30.5%) were accepted; IBERAMIA 2000 received 156, 49 (32%) were accepted; IBERAMIA'98 received 120, 32 (26%) were accepted.

The evaluation of this unexpectedly large number of papers was a challenge, both in terms of evaluating the papers and maintaining the high quality of preceding IBERAMIA conferences. All these goals were successfully achieved by the PC and the auxiliary reviewers. The acceptance rate was very selective 30.5%. It was in line with that of IBERAMIA 2000, 33%, and with IBERAMIA'98, 26%, the most selective.

A large Spanish participation and a low number of application-oriented papers were also significant characteristics of IBERAMIA 2002. The Spanish AI groups submitted 187 papers (50% of the total), to the paper section. This is a reflection of the growth of AI research in Spain, and the maturity attained over the last 16 years.

The correlation between theoretical research and applications seems unbalanced. In IBERAMIA'88 the large majority of papers, 15 out of a total of 22, detailed applications. A full section with 7 papers was devoted to Expert Systems applications. In IBERAMIA 2002 the large majority of papers selected for presentation were devoted to theoretical aspects of AI.

There is no doubt about the need for theoretical research on the modeling and understanding of the mechanisms of intelligence; however, the power and the validity of theoretical models should be demonstrated outside academic labs. It is necessary to go beyond simulated solutions to real engineering solutions which incorporate the scientific and technological knowledge into useful systems, which are able to one day successfully pass the Turing test.

Bridging the gap between theory and practice and incorporating theoretical results into useful products is still one of the key issues for industrialized countries. In the context of Ibero-America it seems essential that AI researchers accept the challenge of solving real-world problems, making the science and technology based on AI contribute to the progress of our developing communities.

This book contains revised versions of the 97 papers selected by the program committee for presentation and discussion during the conference. The volume is structured into 13 thematic groups according to the topics addressed by the papers.

November 2002

Francisco J. Garijo Miguel Toro Bonilla José C. Riquelme Santos

Acknowledgments

We would like to express our sincere gratitude to all the people who helped to bring about IBERAMIA 2002. First of all thanks to the contributing authors, for ensuring the richness of the conference and for their cooperation in the preparation of this volume.

Special thanks are due to the members of the program committee and reviewers for their professionalism and their dedication in selecting the best papers for the conference. Thanks also to the IBERAMIA Executive Committee for its guidance and continuous support.

We owe particular gratitude to the invited speakers for sharing with us their experiences and their most recent research results.

Nothing would have been possible without the initiative and dedication of the Organizing Committee from the LSI Department at the University of Seville. We are very grateful to all the people who helped in the large variety of organizing tasks, namely Mariano González our web manager, Carmelo del Valle our publicity manager, Roberto Ruiz for his support during August, Paco Ferrer for his help in the preparation of this book, Jesús Aguilar and Rafael M. Gasca for their contribution to the management of the tutorials and workshops, Juan A. Ortega and Raúl Giráldez for their help in the management of local arrangements and financial issues. The Organizing Committee chair Miguel Toro Bonilla and his team did a great job.

We would like to thank Telefónica, and especially Arturo Moreno Garciarán, General Director of Institutional Relationships, for his continuous support of the conference and for sponsoring the production of this book. Thanks very much to Telefónica I+D and its CEO, Isidoro Padilla, for providing the environment and the technical facilities to prepare the book.

Finally, we would like to acknowledge the role of the IBERAMIA 2002 sponsors: Universidad de Sevilla, Vicerrectorado de Extensión Universitaria y Vicerrectorado de Investigación, the Spanish council for research and technology, CICYT, and the Fundación FIDETIA. All of them provided constant support for both the conference organization and the proceedings' publication.

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Telefónica I+D
28048 Madrid, Spain

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