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Advances in Soft Computing

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Preface

The Mexican International Conference on Artificial Intelligence (MICAI) is a yearly international conference series organized by the Mexican Society of Artificial Intelligence (SMIA) since 2000. MICAI is a major international AI forum and the main event in the academic life of the country's growing AI community.

This year's event was very special: we celebrated the 25^{th} anniversary of SMIA and 10^{th} anniversary edition of the MICAI series.

MICAI conferences traditionally publish high-quality papers in all areas of artificial intelligence and its applications. The proceedings of the previous MICAI events have been published by Springer in its *Lecture Notes in Artificial Intelligence* (LNAI) series, vol. 1793, 2313, 2972, 3789, 4293, 4827, 5317, 5845, 6437 and 6438. Since its foundation in 2000, the conference has been growing in popularity and improving in quality.

The proceedings of MICAI 2011 have been published in two volumes. The first volume, *Advances in Artificial Intelligence*, contains 50 papers structured into five sections:

- Automated Reasoning and Multi-agent Systems
- Problem Solving and Machine Learning
- Natural Language Processing
- Robotics, Planning and Scheduling
- Medical Applications of Artificial Intelligence

The second volume, *Advances in Soft Computing*, contains 46 papers structured into five sections:

- Fuzzy Logic, Uncertainty and Probabilistic Reasoning
- Evolutionary Algorithms and Other Naturally Inspired Algorithms
- Data Mining
- Neural Networks and Hybrid Intelligent Systems
- Computer Vision and Image Processing

Both books will be of interest for researchers in all fields of AI, students specializing in related topics and for the general public interested in recent developments in AI.

The conference received 348 papers submitted for evaluation, by 803 authors from 40 countries; of these, 96 papers were selected for publication after a peer-reviewing process carried out by the international Program Committee. The acceptance rate was 27.5%.

The distribution of submissions by country or region is represented in Fig. 1, where the square of each circle corresponds to the number of submitted papers. Table 1 shows more detailed statistics. In this table, the number of papers is by authors: e.g., for a paper by 2 authors from USA and 1 author from UK, we added 2/3 to USA and 1/3 to UK.

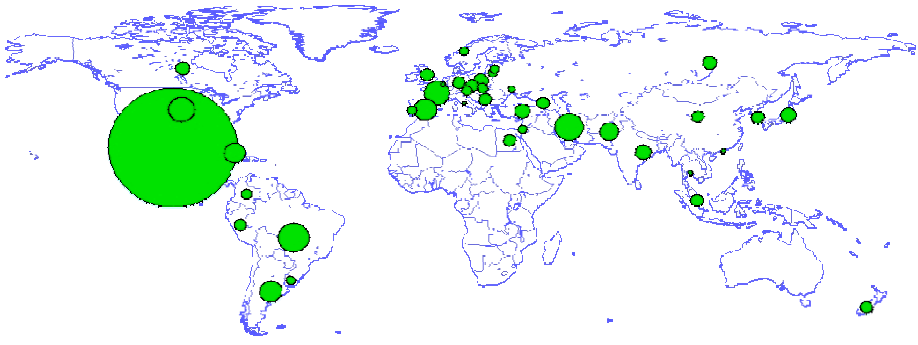

Fig. 1. Distribution of submissions by country or region.

Table 1. Submitted and accepted papers by country or region.

Country or region	Authors	Subm.	Acc.
Argentina	13	7	3
Austria	3	1.53	0.33
Belgium	1	0.25	—
Brazil	35	13.25	3
Canada	8	2.6	1.6
China	5	2	—
Colombia	3	1.5	0.5
Cuba	15	6.21	1.75
Czech Rep.	4	2.5	1
Egypt	5	2	—
France	25	8.95	3.12
Georgia	2	2	—
Germany	3	2	1
Hong Kong	1	0.33	0.33
India	8	3.42	0.75
Iran	16	11	2
Israel	3	1.17	0.67
Italy	1	0.17	—
Japan	7	3	1
Korea, Rep. of	5	2	—
Latvia	1	1	1
Lithuania	9	1	—
Mexico	527	227.64	62.27
New Zealand	5	2	1
Norway	1	1	—
Pakistan	11	4.92	1.42
Peru	3	2	1
Poland	5	3	1
Portugal	4	1	—
Russian Federation	7	2.67	1
Serbia	4	2	—
Singapore	2	2	1
Slovakia	2	1.5	—
Spain	24	7.07	2.42
Thailand	1	0.33	—
Turkey	4	3	—
Ukraine	2	0.5	0.5
United Kingdom	6	2.32	1.32
United States	19	9.18	3.03
Uruguay	3	1	—

The authors of the following papers received the Best Paper Award on the basis of the paper's overall quality, significance and originality of the reported results:

1st place: *SC Spectra: A New Soft Cardinality Approximation for Text Comparison*, by Sergio Jimenez Vargas and Alexander Gelbukh (Colombia, Mexico)

2nd place: *Fuzzified Tree Search in Teal Domain Games*, by Dmitrijs Rutko (Latvia)

3rd place: *Multiple Target Tracking with Motion Priors*, by Francisco Madrigal, Jean-Bernard Hayet and Mariano Rivera (Mexico)

In addition, the authors of the following papers selected among articles where the first author was a full-time student (excluding the papers listed above) received the Best Student Paper Award:

1st place: *Topic Mining Based on Graph Local Clustering*, by Sara Elena Garza Villarreal and Ramon Brena (Mexico)

2nd place: *Learning Probabilistic Description Logics: A Framework and Algorithms*, by Jose Eduardo Ochoa-Luna, Kate Revoredo and Fabio Gagliardi Cozman (Brazil)

3rd place: *Instance Selection Based on the Silhouette Coefficient Measure for Text Classification*, by Debangana Dey, Thamar Solorio, Manuel Montes y Gomez and Hugo Jair Escalante (USA, Mexico)

We want to thank all the people involved in the organization of this conference. In the first place, these are the authors of the papers published in this book: it is their research work that gives value to the book and to the work of the organizers. We thank the Track Chairs for their hard work, the Program Committee members and additional reviewers for their great effort spent on reviewing the submissions.

We would like to express our sincere gratitude to the Benemérita Universidad Autónoma de Puebla (BUAP), the Rector's Office of the BUAP headed by Dr. Enrique Agüera Ibañez; Dr. José Ramón Eguibar Cuenca, Secretary General of the BUAP; Alfonso Esparza Ortiz, Treasurer General of the BUAP; José Manuel Alonso of DDIE; Damián Hernández Méndez of DAGU; Dr. Lilia Cedillo Ramírez, Vice-rector of Extension and Dissemination of Culture of the BUAP; Dr. Gabriel Pérez Galmichi of the Convention Center; Dr. Roberto Contreras Juárez, Administrative Secretary of the Faculty of Computer Science of the BUAP; and to MC Marcos González Flores, head of the Faculty of Computer Science of the BUAP, for their warm hospitality related to MICAI 2011 and for providing the infrastructure for the keynote talks, tutorials and workshops, as well as for their valuable participation and support in the organization of this conference.

Their commitment allowed the opening ceremony, technical talks, workshops and tutorials to be held at the Centro Cultural Universitario, an impressive complex of buildings that bring together expressions of art, culture and academic affairs associated with the BUAP.

We are deeply grateful to the conference staff and to all members of the Local Committee headed by Dr. David Eduardo Pinto Avendaño. In particular, we would like to thank Dr. Maya Carrillo for chairing the logistic affairs of the conference, including her valuable effort for organizing the cultural program; Dr. Lourdes Sandoval for heading the promotion staff; as well as Dr. Arturo Olvera, head of the registration staff, Dr. Iván Olmos, Dr. Mario Anzures, and Dr. Fernando Zacarías (sponsors staff) for obtaining additional funds for this conference.

We also want to thank the sponsors that provided partial financial support to the conference: CONCYTEP, INAOE, Consejo Nacional de Ciencia y Tecnología (CONACYT) project 106625, TELMEX, TELCEL, Universidad Politécnica de

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The entire submission, reviewing and selection process as well as putting together the proceedings were supported for free by the EasyChair system (www.easychair.org). Last but not least, we are grateful to Springer for their patience and help in preparation of this volume.

September 2011

Ildar Batyrshin
Grigori Sidorov

Conference Organization

MICAI 2011 was organized by the Mexican Society of Artificial Intelligence (SMIA, Sociedad Mexicana de Inteligencia Artificial) in collaboration with Benemérita Universidad Autónoma de Puebla (BUAP), Centro de Investigación en Computación del Instituto Politécnico Nacional (CIC-IPN), Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE), Universidad Nacional Autónoma de México (UNAM), Universidad Autónoma de México (UAM), Instituto Tecnológico de Estudios Superiores de Monterrey (ITESM), Universidad Autónoma de Estado de Hidalgo (UAEH) and Instituto Mexicano de Petroleo (IMP), Mexico.

The MICAI series website is www.MICAI.org. The website of the Mexican Society of Artificial Intelligence, SMIA, is www.SMIA.org.mx. Contact options and additional information can be found on these websites.

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