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Advances in Computational Intelligence


19th Mexican International Conference
on Artificial Intelligence, MICAI 2020
Mexico City, Mexico, October 12–17, 2020
Proceedings, Part II

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ISSN 0302-9743 ISSN 1611-3349 (electronic)
Lecture Notes in Artificial Intelligence
ISBN 978-3-030-60886-6 ISBN 978-3-030-60887-3 (eBook)
<https://doi.org/10.1007/978-3-030-60887-3>

LNCS Sublibrary: SL7 – Artificial Intelligence

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The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

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

MICAI conferences publish high-quality papers in all areas of AI 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, 6438, 7094, 7095, 7629, 7630, 8265, 8266, 8856, 8857, 9413, 9414, 10061, 10062, 10632, 10633, 11288, 11289, and 11835. Since its foundation in 2000, the conference has been growing in popularity and improving in quality.

The proceedings of MICAI 2020 are published in two volumes. The first volume, *Advances in Soft Computing*, contains 37 papers structured into three sections:

- Machine and Deep Learning
- Evolutionary and Metaheuristic Algorithms
- Soft Computing

The second volume, *Advances in Computational Intelligence*, contains 40 papers structured into three sections:

- Natural Language Processing
- Image Processing and Pattern Recognition
- Intelligent Applications and Robotics

The two-volume set will be of interest for researchers in all fields of AI, students specializing in related topics, and for the public in general interested in recent developments in AI.

The conference received for evaluation 186 submissions from 26 countries: Argentina, Armenia, Austria, Belgium, Brazil, Colombia, Cuba, Czech Republic, Ecuador, Finland, France, India, Ireland, Kazakhstan, Mexico, Nepal, Nigeria, Pakistan, Peru, Portugal, Russia, South Africa, Spain, Switzerland, Ukraine, and USA. From these submissions, 77 papers were selected for publication in these two volumes after a peer-reviewing process carried out by the International Program Committee. The acceptance rate was 41%.

The International Program Committee consisted of 152 experts from 16 countries: Australia, Brazil, Colombia, France, Greece, Ireland, Japan, Kazakhstan, Malaysia, Mexico, Philippines, Portugal, Russia, Spain, the UK, and the USA.

MICAI 2020 was honored by the presence of renowned experts who gave excellent keynote lectures:

- Ljiljana Trajkovic, Simon Fraser University, Canada
- Pedro Larrañaga, Technical University of Madrid, Spain

- Manuel Morales, University of Montreal, Canada
- Soujanya Poria, Singapore University of Technology and Design, Singapore
- Francisco Hiram Calvo Castro, CIC-IPN, Mexico

Four workshops were held jointly with the conference:

- The 13th Workshop on Intelligent Learning Environments (WILE 2020)
- The 13th Workshop of Hybrid Intelligent Systems (HIS 2020)
- The Second Workshop on New Trends in Computational Intelligence and Applications (CIAPP 2020)
- The 6th Workshop on Intelligent Decision Support Systems for Industry (WIDSSI 2020)

The authors of the following papers received the Best Paper Awards based on the paper’s overall quality, significance, and originality of the reported results:

- First place: “An NSGA-III-based Multi-Objective Intelligent Autoscaler for Executing Engineering Applications in Cloud Infrastructures,” by Virginia Yannibelli, Elina Pacini, David Monge, Cristian Mateos, and Guillermo Rodriguez (Argentina)
- Second place: “Speaker Identification using Entropygrams and Convolutional Neural Networks,” by Antonio Camarena-Ibarrola, Karina Figueroa, and Jonathan García (Mexico)
- Third place: “Dissimilarity-Based Correlation of Movements and Events on Circular Scales of Space and Time,” by Ildar Batyrshin, Nailya Kubysheva, and Valery Tarassov (Mexico/Russia)

We want to thank all the people involved in the organization of this conference: to the authors of the papers published in these two volumes – it is their research work that gives value proceedings – and to the organizers for their work. We thank to the reviewers for their great effort spent on reviewing the submissions, to the track chairs for their hard work, and to the Program and Organizing Committee members.

We are deeply grateful to the Universidad Panamericana for their warm hospitality of MICA I 2020. We would like to express our gratitude to Dr. Santiago García Álvarez, Rector of the Universidad Panamericana, Campus Mexico, Dr. Alejandro Ordoñez Torres, Director of the School of Engineering of the Universidad Panamericana, Campus Mexico, and Dr. Roberto González Ojeda, Secretary of Research at the School of Engineering.

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

October 2020

Lourdes Martínez-Villaseñor
Oscar Herrera-Alcántara
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Organization

MICAI 2020 was organized by the Mexican Society of Artificial Intelligence (SMIA, Sociedad Mexicana de Inteligencia Artificial) in collaboration with the Universidad Panamericana, the Universidad Autónoma del Estado de Hidalgo, and the Universidad Autónoma Metropolitana.

The MICAI series website is www.MICAL.org. The website of SMIA, is www.SMIA.mx. Contact options and additional information can be found on these websites.

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