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Preface

This volume contains a selected and peer-reviewed set of papers explicitly submitted to CAEPIA 20/21, the XIX Conference of the Spanish Association for Artificial Intelligence, held in Málaga, Spain, during September 22–24, 2021. This series of conferences is a well-established biennial Spanish event on Artificial Intelligence (AI) that started back in 1985. Previous editions took place in Alicante, Málaga, Murcia, Gijón, San Sebastián, Santiago de Compostela, Sevilla, La Laguna, Madrid, Albacete, Salamanca, and Granada.

CAEPIA is a national forum open to researchers from all over the world to present and discuss their latest scientific and technological advances in AI. Authors were kindly requested to submit unpublished original papers describing relevant achievements on AI topics for evaluation to appear in this volume. The conference welcomed theoretical, methodological, technical, and applied research.

Several federated congresses and workshops related to relevant AI tracks took place within CAEPIA: XX Spanish Congress on Fuzzy Logic and Technologies (ESTYLF); XIV Spanish Congress on Metaheuristics, Evolutionary and Bioinspired Algorithms (MAEB); X Symposium of Theory and Applications of Data Mining (TAMIDA); and six workshops.

Within CAEPIA 20/21 we also had a Doctoral Consortium (DC) for students. This is a forum for doctoral students to interact with other researchers by discussing their PhD advances and working plans. As an additional AI activity, we ran the 4th Competition on Mobile Apps with AI Techniques, side by side with a new edition of the AI Dissemination Videos Competition.

All the above activities endorse AI, and we strove to reach a high quality in the scientific papers, the DC, and the competitions. The scientific program of CAEPIA 20/21 also offered a track to disseminate outstanding recently published papers (Key Works: KW) appearing in renowned journals and fora. CAEPIA has always aimed to be recognized as a flagship conference in AI, and thus the peer reviewed papers, especially for this LNAI volume, went through a strict evaluation process. The total number of submissions to CAEPIA 20/21 was 186 (neither DC nor competitions nor KW submissions (83 additional contributions) were included in this number, since they went through a different evaluation process). Only 25 outstanding manuscripts were selected for this volume after a thorough double-blind review process that involved at least three reviews per submission, for which we are grateful to the area experts and the Program Committee. The reviewers judged the overall quality of the submitted manuscripts, together with the quality of the methodology employed, the soundness of the conclusions, the significance of the topic, the clarity, and the organization, among other evaluation criteria. On the basis of these reviews, the area experts proposed a final number of articles that were analyzed and approved by the editors of this LNAI volume.

CAEPIA 20/21 invited two internationally renowned researchers for a plenary talk. Our conference was held as a big event within the still larger Spanish Conference on Computer Science (CEDI), itself having very interesting plenary talks too. Our two

plenary speakers were Óscar Cordón (Artificial Intelligence for Forensic Anthropology and Human Identification) and Yaochu Jin (Data-Driven Evolutionary Optimization).

AEPIA and the organizers of CAEPIA 20/21 recognized the best PhD theses and all the original articles in federated events written by both, seniors and students. CAEPIA 20/21 also aimed to promote the presence of women in AI research. As in previous editions, the Frances Allen award recognized the two best PhD theses defended by a woman during the last two years.

The editors of this volume would like to thank the many people that contributed to the success of CAEPIA 20/21: authors, members of the Scientific and Program Committees, invited speakers, event organizers, electronic media managers, etc. We would like to especially thank the tireless work of the Organizing Committee, our sponsors (like VRAIN in Valencia), the Springer team, and AEPIA for their support.

Last but not least, on behalf of the CAEPIA 20/21 participants, Enrique Alba (General Chair), and Gabriel Luque (LNAI volume responsible) really thank the University of Malaga (local premises for the conference) and the whole Spanish community working in AI (and their many foreign collaborators) for making this event a real success.

July 2021

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