

Carlos Bento
Amílcar Cardoso
Gaël Dias (Eds.)

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Progress in Artificial Intelligence

12th Portuguese Conference
on Artificial Intelligence, EPIA 2005
Covilhã, Portugal, December 2005, Proceedings



Carlos Bento Amílcar Cardoso
Gaël Dias (Eds.)

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Preface

With this edition, EPIA, the Portuguese Conference on Artificial Intelligence, celebrates its 20th anniversary. Like all its previous editions, it has been run under the auspices of the Portuguese Association for Artificial Intelligence (APPIA), which was established in 1984 and is also celebrating 20 years of activity.

The first edition of EPIA was held in Porto, in October 1985, organised by Pavel Brazdil, Miguel Filgueiras, Luís Damas and Armando Campos e Matos. EPIA soon evolved to an international conference by adopting in its fourth edition English as the official language and having its proceedings published by Springer, in the LNAI series. In recent years, the conference gradually progressed from a plenary organisation to a workshop-based structure. The conference has steadily assumed high-quality standards, both in its scientific management and in the scientific program, with the aim of progressively broadening its audience and improving its impact over young researchers.

EPIA 2005 was the 12th edition of the conference. With the above-mentioned celebrations in mind, we decided to work towards the involvement of several generations of AI researchers in the organisation of the event. As a result, EPIA 2005 involved for the first time an Advisory Committee, composed of all the founders of APPIA that are still working in AI, and also the Co-chairs of the last EPIAs, as listed elsewhere in these proceedings. We want to express to them our gratitude for all the support, advice and confidence.

When we set about organising the event, we committed ourselves to the objective of expanding the thematic range of the conference by attracting emerging and boundary areas, while still including areas with an already consolidated research history. This led us to adopt from previous issues a conference structure based on a set of Thematic Workshops, to provide the participants with the opportunity to focus on specific thematic and unique application areas.

EPIA 2005 was innovative in this matter by issuing a public Call for Workshops and setting up a refereed selection process, held by the new Advisory Committee, which increased the number and diversity of themes in discussion. As a result, eight thematic workshops were approved, with a diversity of scopes, including novel proposals (AC, BAOSW, CMB, IROBOT and TEMA) as well as progressions of workshops held in previous EPIAs (ALEA, MASTA and EKDB&W). We must acknowledge the key importance of these workshops in the success of the event. Particular thanks are due to the Workshop Chairs, listed elsewhere in these proceedings, for their invaluable proposals and collaboration.

This edition also included, for the first time, a General AI workshop (GAIW), with its own organising structure, which aimed to address all the AI topics not covered by the remaining workshops. This wide-scope workshop complemented

the remaining ones by allowing any AI researcher to participate without compromising the overall coherence of the conference structure.

EPIA 2005 reconfirmed the international status of the conference and the high standard of accepted papers. A total of 167 contributions were received from 29 countries (65 from Portugal, 17 from Brazil, 15 from Spain, 10 from Netherlands, 9 from the UK, 4 from France, Iran and the USA, 3 from Belgium and Germany, and the remaining ones from diverse origins, from Algeria to Canada, from China to Mexico, from Korea to India, and many others). All submissions were anonymous. All of them were subject to an IJCAI-style triple-blind peer review. Common guidelines, tools and procedures were adopted for all the workshops. From the submitted contributions, 58 were selected for publication in this volume as full papers and are organised in chapters, by workshop.

The EPIA 2005 Workshops could count on highly qualified Program Committees, which included many internationally distinguished researchers covering a wide range of AI areas. These committees involved 213 researchers from 24 countries (74 from Portugal, 20 from Germany, 18 from the USA, 15 from Spain and the UK, 14 from France, 13 from Brazil, just to mention the most representative). Our special thanks go to them and also to the reviewers, listed elsewhere in these proceedings, for their excellent work.

The participation as invited speakers of the distinguished researchers Richard Benjamin (University of Amsterdam, The Netherlands), Gregory Grefenstette (Commissariat à l'Energie Atomique, France), Auke Ijspeert (École Polytechnique Fédérale de Lausanne, Switzerland), Andrew Phillips (Microsoft Research, UK) and Push Singh (Media Lab, MIT, USA) greatly contributed to broadening the thematic spectrum of the conference.

We are honoured to announce that this conference was organised in cooperation with the following prestigious European and American scientific associations: ECCAI, AAAI, IEEE-SMC and ACM.

The Research to Industry Day, held in Parkurbis, the incubator associated to the University of Beira Interior, was another innovation of this EPIA. It was devoted to the challenging process of going from pre-competitive research to successful commercial projects, and involved specialists on the settlement of new enterprises and on relevant legal and financial aspects of the process. This initiative also comprised an Intelligent Systems Demonstration event, which contributed to the diffusion of the AI achievements, particularly among young students.

Several people gave us invaluable help in several stages of this process of preparing EPIA 2005. Special thanks go to Gabriel Pereira Lopes, Sónia Vaz, João Cunha, Jorge Tavares and Penousal Machado. We are also grateful to the authors and presenters, as well as to all those who participated in EPIA in some way. An acknowledgement is also due to the institutions and companies that sponsored this event. We list them elsewhere in these proceedings. The final thanks go to Springer for their help and assistance in producing this book.

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