

**Lecture Notes in Artificial Intelligence**  
Subseries of Lecture Notes in Computer Science  
Edited by J. Siekmann

**Lecture Notes in Computer Science**  
Edited by G. Goos and J. Hartmanis

## **Editorial**

Artificial Intelligence has become a major discipline under the roof of Computer Science. This is also reflected by a growing number of titles devoted to this fast developing field to be published in our Lecture Notes in Computer Science. To make these volumes immediately visible we have decided to distinguish them by a special cover as Lecture Notes in Artificial Intelligence, constituting a subseries of the Lecture Notes in Computer Science. This subseries is edited by an Editorial Board of experts from all areas of AI, chaired by Jörg Siekmann, who are looking forward to consider further AI monographs and proceedings of high scientific quality for publication.

We hope that the constitution of this subseries will be well accepted by the audience of the Lecture Notes in Computer Science, and we feel confident that the subseries will be recognized as an outstanding opportunity for publication by authors and editors of the AI community.

Editors and publisher

# Lecture Notes in Artificial Intelligence

Subseries of Lecture Notes in Computer Science

Edited by J. Siekmann

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J.P. Martins   E.M. Morgado (Eds.)

**EPIA 89**

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Proceedings

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## *PREFACE*

The Fourth Portuguese Conference on Artificial Intelligence (EPIA89) was organized under the auspices of the Portuguese Association for Artificial Intelligence (Associação Portuguesa para a Inteligência Artificial - APPIA). The previous Portuguese conferences, held in 1985, 1986, and 1987 had the goal of communication among the Portuguese AI community. For that reason, the standards of acceptance were low and acceptance was based on abstracts only. The goal of the first three conferences was successfully met as they helped the Portuguese AI community to grow and mature. In the 1987 conference the standards and themes of some presentations reached an international level.

It was decided in 1987 that future conferences would be held every two years, that the participation should be broadened to an international audience, and that the quality of the technical contributions should increase. The 1989 conference is the first edition conducted under such orientation. We received 62 contributions, and each contribution was refereed by at least two members of the Program Committee. Out of those, 28 were selected for publication in the present Proceedings. The papers of the five invited lecturers were accepted without refereeing. The paper "On the Classification and Existence of Structures in Default Logic", by Aidong Zhang and Wiktor Marek received the prize of the most outstanding paper in the Conference.

EPIA89 is devoted to all areas of AI and covers theoretical and foundational aspects as well as applications. Submissions were encouraged in the following areas: Knowledge Representation, Automatic Deduction, Non-standard Logics, Logic Programming, Natural Language Understanding, Learning, Planning, Architectures and Languages, Knowledge Engineering, and Applications.

We thank the other Program Committee members Pavel Brazdil, Helder Coelho, Ernesto Costa, Miguel Filgueiras, Luis Monteiro, Fernando Pereira, Luis Moniz Pereira, and António Porto for their contribution to the technical quality of the Conference.

We thank our invited speakers Robert C. Moore, António G. Portela, Michael Reinfrank, Stuart C. Shapiro, and John F. Sowa for increasing the interest and quality of our Conference with their presentations.

We also thank the following institutions that contributed (financially or otherwise) to the organization of the conference:

*BESCL, Banco Espírito Santo & Comercial de Lisboa* supplied the participants with folders and note pads;

*CONTROL DATA Portuguesa, SA* supplied general financial support during the Conference;

*CTT/TLP* supported the publication of these Proceedings;

*DIGITAL Equipment Portugal* supported the participation of Robert C. Moore;

*Fundação Calouste Gulbenkian* allowed us to use their auditoriums for the Conference;

*IBM Portuguesa* supported the participation of John F. Sowa;

*INIC, Instituto Nacional de Investigação Científica* supplied general financial support during the Conference;

*INTERLOG* supplied financial support for the best paper award;

*IST, Instituto Superior Técnico* supported all the communications (electronic and otherwise) needed for the organization of the Conference;

*NIXDORF* supported the participation of Michael Reinfrank;

*SISCOG* supplied secretarial work;

*UNISYS* supported the participation of Stuart C. Shapiro.

We hope that this first international conference will be a seed for future AI conferences in Portugal and for the development of Artificial Intelligence.

Lisbon, July 1989

*João P. Martins*

*Ernesto M. Morgado*

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