

Preface

The *14th Portuguese Conference on Artificial Intelligence*, EPIA'2009, took place at Hotel Meliá Ria, in Aveiro, Portugal, in October 12-15, 2009. This international conference was organized by the University of Aveiro and, as in previous years, was held under the auspices of the Portuguese Association for Artificial Intelligence (APPIA). The purpose of EPIA'2009 was to promote research in all areas of Artificial Intelligence (AI), covering both theoretical/foundational issues and applications, and the scientific exchange among researchers, engineers and practitioners in related disciplines.

To promote discussions among participants, EPIA'2009 was structured as a set of thematic tracks proposed by the international AI research community. Thematic tracks are intended to provide an informal environment that fosters the active cross-fertilization of ideas between researchers within specific sub-areas of AI, including theoretical/foundational, integrative, application-oriented and newly emerging areas. The proposals received in response to a public Call for Thematic Tracks were evaluated by the Program Chair and the General Chairs in consultation with the Advisory Committee. The following tracks were selected and included in the conference program:

- AITUM – Artificial Intelligence in Transportation and Urban Mobility
- ALEA – Artificial Life and Evolutionary Algorithms
- CMBSB – Computational Methods in Bioinformatics and Systems Biology
- COLA – Computational Logic with Applications
- EAC – Emotional and Affective Computing
- GAI – General Artificial Intelligence
- IROBOT – Intelligent Robotics
- KDBI – Knowledge Discovery and Business Intelligence
- MASTA – Multi-Agent Systems: Theory and Applications
- SSM – Social Simulation and Modelling
- TEMA – Text Mining and Applications
- WNI – Web and Network Intelligence

Each track was coordinated by an Organizing Committee composed of, at least, two researchers in the field, from different institutions. An international Program Committee, with recognized researchers within each track's scientific areas, was created.

In response to the Call for Papers, a total of 163 paper submissions were received from 21 countries, namely Australia, Austria, Belgium, Brazil, Bulgaria, Cuba, France, Germany, Hungary, India, Iran, Italy, Kuwait, Netherlands, Portugal, Singapore, Spain, Taiwan, Tunisia, United Kingdom and USA. All submissions were evaluated by at least three members of the Program Committees

of the respective tracks and were selected for presentation at the conference on the basis of quality and relevance to the issues each track is addressing. A selection of higher quality papers presented in the different tracks is published in a book edited by Springer. The remaining papers are published in this proceedings volume. The numbers of submitted papers in each track and the respective numbers of accepted papers are given in Table 1. The overall acceptance rate was 65%.

Table 1. Numbers of papers submitted, accepted and selected for inclusion in the Springer book.

	Submitted	Accepted	Springer LNAI 5816
AITUM	11	7	3
ALEA	12	7	3
CMBSB	5	3	2
COLA	10	8	5
EAC	7	5	3
GAI	11	7	3
IROBOT	27	17	10
KDBI	17	12	7
MASTA	22	13	7
SSM	10	8	4
TEMA	25	15	7
WNI	6	4	1
Total	163	106	55

This edition of EPIA featured, for the first time, a *Nectar Track*, that is, a set of plenary sessions with a selection of top-quality papers accepted in the different tracks. The Nectar Track aims to promote the dissemination of information between research groups with different interests within the AI field, as well as the cooperation between different research groups and the development of integrative research projects. The Nectar Track also aims to provide increased visibility to some of the best papers in the conference program and, in so doing, provide a general view of the AI field and its currently hot topics. After consultation with the EPIA'2009 Advisory Committee, the following papers were included in the Nectar Track:

- “A Data-Based Approach to Integrating Representations of Personality Traits, Values, Beliefs and Behavior Descriptions”, by Boon-Kiat Quek, Kayo Sakamoto, and Andrew Ortony
- “Comparing Different Properties Involved in Word Similarity Extraction”, by Pablo Gamallo Otero
- “Constraint-based strategy for pairwise RNA secondary structure prediction”, by Olivier Perriquet and Pedro Barahona

- “Cost-Sensitive Learning Vector Quantization for Credit Scoring”, by Ning Chen, Armando S. Vieira, João Duarte, Bernardete Ribeiro, and João C. Neves
- “Efficient Coverage of Case Space with Active Learning”, by Nuno Filipe Escudeiro and Alípio Mário Jorge
- “How much should agents remember? The role of memory size on convention emergence efficiency”, by Paulo Urbano, João Balsa, Paulo Ferreira Jr., and Luis Antunes
- “Roles, Positionings and Set Plays to Coordinate a RoboCup MSL Team”, by Nuno Lau, Luís Seabra Lopes, Nelson Filipe, and Gustavo Corrente
- “Semantic Image Search and Subset Selection for Classifier Training in Object Recognition”, by Rui Pereira, Luís Seabra Lopes, and Augusto Silva
- “Sensitivity Analysis of a Tax Evasion Model Applying Automated Design of Experiments”, by Attila Szabó, László Gulyás, and István János Tóth
- “Type Parametric Compilation of Algebraic Constraints”, by Marco Correia and Pedro Barahona
- “Using Operator Equalisation for Prediction of Drug Toxicity with Genetic Programming”, by Leonardo Vanneschi and Sara Silva

In addition to the parallel sessions for the different tracks and the plenary nectar sessions, the program of EPIA’2009 included plenary talks by distinguished researchers in the AI field, namely:

- Hod Lipson, from Cornell University, with a talk on “The Robotic Scientist: Mining experimental data for dynamical invariants, from cognitive robotics to computational biology”.
- Marie-Francine Moens, from Katholieke Universiteit Leuven, with a talk on “More than Just Words: Discovering the Semantics of Text with a Minimum of Supervision”.
- Demetri Terzopoulos, from University of California, Los Angeles, with a talk on “Artificial Life Simulation of Humans and Lower Animals: From Biomechanics to Intelligence”.

Finally, the program of EPIA’2009 also included the *2nd Doctoral Symposium on Artificial Intelligence* (SDIA).

EPIA’2009 was organized in cooperation with the Special Interest Group on Artificial Intelligence of the Association for Computing Machinery (ACM-SIGART) and the Portuguese Chapter of the IEEE Computational Intelligence Society. The conference was co-sponsored by the Portuguese Research Foundation (FCT) and IEEE Portugal Section. The participation of Demetri Terzopoulos as invited speaker was funded by the Organizing Committee of the ALEA Thematic Track. We highly appreciate and thank the collaboration of the members of all committees, namely the Advisory Committee, the Organizing Committees and Program Committees of the different tracks and the Organizing Committee of SDIA. We also thank invited speakers, authors, referees and session chairs for their contributions to the conference program. Thanks are also due

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