ARTIFICIAL INTELLIGENCE APPLICATIONS AND INNOVATIONS III

IFIP – The International Federation for Information Processing

IFIP was founded in 1960 under the auspices of UNESCO, following the First World Computer Congress held in Paris the previous year. An umbrella organization for societies working in information processing, IFIP's aim is two-fold: to support information processing within its member countries and to encourage technology transfer to developing nations. As its mission statement clearly states,

> *IFIP's mission is to be the leading, truly international, apolitical organization which encourages and assists in the development, exploitation and application of information technology for the benefit of all people.*

IFIP is a non-profitmaking organization, run almost solely by 2500 volunteers. It operates through a number of technical committees, which organize events and publications. IFIP's events range from an international congress to local seminars, but the most important are:

- The IFIP World Computer Congress, held every second year;
- Open conferences;
- Working conferences.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

As with the Congress, participation in the open conferences is open to all and papers may be invited or submitted. Again, submitted papers are stringently refereed.

The working conferences are structured differently. They are usually run by a working group and attendance is small and by invitation only. Their purpose is to create an atmosphere conducive to innovation and development. Refereeing is less rigorous and papers are subjected to extensive group discussion.

Publications arising from IFIP events vary. The papers presented at the IFIP World Computer Congress and at open conferences are published as conference proceedings, while the results of the working conferences are often published as collections of selected and edited papers.

Any national society whose primary activity is in information may apply to become a full member of IFIP, although full membership is restricted to one society per country. Full members are entitled to vote at the annual General Assembly, National societies preferring a less committed involvement may apply for associate or corresponding membership. Associate members enjoy the same benefits as full members, but without voting rights. Corresponding members are not represented in IFIP bodies. Affiliated membership is open to non-national societies, and individual and honorary membership schemes are also offered.

ARTIFICIAL INTELLIGENCE APPLICATIONS AND INNOVATIONS III

Proceedings of the 5TH IFIP Conference on Artificial Intelligence Applications and Innovations (AIAI'2009), April 23-25, 2009, Thessaloniki, Greece

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Library of Congress Control Number: 2009921831

Artificial Intelligence Applications and Innovations III

Edited by Lazaros Iliadis, Ioannis Vlahavas and Max Bramer

p. cm. (IFIP International Federation for Information Processing, a Springer Series in Computer Science)

ISSN: 1571-5736 / 1861-2288 (Internet)
ISBN: 978-1-4419-0220-7
eISBN: 978-1-4419-0221-4

Printed on acid-free paper

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Preface

The ever expanding abundance of information and computing power enables researchers and users to tackle highly interesting issues, such as applications providing personalized access and interactivity to multimodal information based on user preferences and semantic concepts or human-machine interface systems utilizing information on the affective state of the user. The general focus of the AIAI conference is to provide insights on how AI can be implemented in real world applications.

This volume contains papers selected for presentation at the 5th IFIP Conference on Artificial Intelligence Applications & Innovations (AIAI 2009) being held from 23rd till 25th of April, in Thessaloniki, Greece. The IFIP AIAI 2009 conference is co-organized by the Aristotle University of Thessaloniki, by the University of Macedonia Thessaloniki and by the Democritus University of Thrace. AIAI 2009 is the official conference of the WG12.5 "Artificial Intelligence Applications" working group of IFIP TC12 the International Federation for Information Processing Technical Committee on Artificial Intelligence (AI).

It is a conference growing and maintaining high standards of quality. The purpose of the 5th IFIP AIAI Conference is to bring together researchers, engineers and practitioners interested in the technical advances and business / industrial applications of intelligent systems. AIAI 2009 is not only focused in providing insights on how AI can be implemented in real world applications, but it also covers innovative methods, tools and ideas of AI on architectural and algorithmic level.

The response to the 'Call for Papers' was overwhelming resulting in the submission of 113 high quality full papers. All contributions were reviewed by two independent academic referees. A third referee was consulted in some cases with conflicting reviews after the submission of the reviews was officially over. Finally, 30 full papers and 32 short papers were accepted. This amounts to an acceptance rate of 27% for full papers and 28% for short ones. The authors of the accepted papers come from 19 countries from all over the world. The collection of papers that were included in the proceedings offer stimulating insights into emerging applications of AI and describe advanced prototypes, systems, tools and techniques. The 2009 AIAI Proceedings will interest not only academics and researchers, but also IT professionals and consultants by examining technologies and applications of demonstrable value.

Two Keynote speakers are invited to make interesting presentations on innovative and state of the art aspects of AI:

1. Professor Nikolaos Bourbakis, Associate Dean for Engineering Research, Distinguished Professor of Information Technology and Director of the ATR Center at Wright State University will talk about "*Synergies of AI Methods for Robotic Planning & Grabbing, Facial Expressions Recognition, and Blind's Navigation*".

2. Professor Dominic Palmer-Brown, Dean, Metropolitan University London, UK, will talk about "*Neural Networks for Modal and Virtual Learning*".

We would like to express our thanks to the Program Committee chair, Associate Professor L. Iliadis, to the Workshop chair, Assistant Professor N. Bassiliades, and to the Organizing Committee chair Professor Yannis Manolopoulos, for their crucial help in organizing this event. Special thanks are also due to the co-editors of the proceedings, Assistant Professor Ilias Maglogiannis and Lecturer Gregory Tsoumakas.

The AIAI 2009 conference comprises of the following seven (7) main thematic Sessions:

- *Machine Learning and Classification*
- *Knowledge Engineering and Decision Support Systems*
- *Ontologies and Knowledge Representation*
- *AI in Medical Informatics & Biomedical Engineering*
- *Signal and Image Processing for Knowledge Extraction*
- *Artificial Intelligence Applications*
- *Intelligent Environments and HCI*

Also Workshops on various specific AI application areas, such as Software Engineering, Bioinformatics and Medicine, Learning, Environment, have been scheduled.

The wide range of topics and high level of contributions will surely guarantee a very successful conference. We express our special thanks to all who have contributed to the organization and scientific contents of this conference, first to the authors and reviewers of the papers, as well as the members of the Program and Organization Committees.

Ioannis Vlahavas
Max Bramer

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