
ARTIFICIAL INTELLIGENCE AND
INNOVATIONS 2007: FROM THEORY
TO APPLICATIONS

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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.

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ARTIFICIAL INTELLIGENCE AND INNOVATIONS 2007: FROM THEORY TO APPLICATIONS

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and Innovations (AIAI 2007)*

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Foreword

It is our pleasure to present to you the Proceedings of AIAI 2007, the 4th IFIP Conference on Artificial Intelligence Applications & Innovations being held from 19th till 21st of September, in Peania, Athens, GREECE.

Relying on a solid theoretical background and exploiting the outcomes of exhaustive research efforts, artificial intelligence technology has been widely applied to various areas aiming at the development of intelligent systems that resemble to an extent human thinking and decision-making. These efforts are supported by the ever-expanding abundance of information and computing power. Typical applications of AI include the personalized access and interactivity to multimodal information based on user preferences and semantic concepts and human-machine interface systems utilizing information on the affective state of the user. Also, advancements in AI gave rise to the science of machine learning whose concern is the development of algorithms and techniques that allow computers to learn.

The purpose of the 4th IFIP Conference on Artificial Intelligence Applications and Innovations (AIAI) is to bring together researchers, engineers and practitioners interested in the technical advances, business and industrial applications of intelligent systems. AIAI 2007 is focused on providing insights on how AI can be implemented in real world applications.

The response to the 'Call for Papers' has been warm, attracting submissions from ten countries. The task of the Technical Program Committee was very challenging putting together a Program containing 42 high quality contributions. The collection of papers included in the proceedings offers stimulating insights into emerging applications of AI and describes advanced prototypes, systems, tools and techniques. AIAI Proceedings will interest not only academics and researchers, but IT professionals and consultants by examining technologies and applications of demonstrable value.

One session in theoretical advances and six more sessions dedicated to specific AI applications are affiliated within the AIAI 2007 conference:

- Theoretical Advances in AI
- Intelligent Internet Systems: Emerging Technologies and Applications
- Intelligent Systems in Electronic Healthcare
- AI in Business and Finance

- Applications of AI in Industry and Daily Round
- Applications of AI in Communications and Networks
- Intelligent Processing of Audiovisual Content

Two plenary talks are also scheduled:

- Building Relationships and Negotiating Agreements in a Network of Agents
John Debenham, Faculty of Information Technology, University of Technology, Sydney Australia
- The AI singularity: Will machines take over the world?
George Zarkadakis, Director of Science Communication, Euroscience (Greece)

The wide range of topics and the outstanding quality of the contributions guarantee a very successful conference.

Finally, we would like to express our sincere gratitude to all who have contributed to the organization of this conference: firstly to the authors and the plenary speakers, and then to the special session organizers, the reviewers and the members of the Program and Organization Committees.

September, 2007 AIAI 2007 Conference Chairs:

Aristodemos Pnevmatikakis, Athens Information Technology, Greece

Ilias Maglogiannis, University of Aegean, Greece

Lazaros Polymenakos, Athens Information Technology, Greece

Max Bramer, University of Portsmouth, UK

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