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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 also 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 about information processing 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.

More information about this series at <http://www.springer.com/series/6102>

Tharam Dillon (Ed.)

Artificial Intelligence in Theory and Practice IV

4th IFIP TC 12 International Conference
on Artificial Intelligence, IFIP AI 2015
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Preface

The papers in this volume comprise the refereed proceedings of the conference Artificial Intelligence in Theory and Practice (IFIP AITP 2015), which formed part of the 23rd World Computer Congress of IFIP, the International Federation for Information Processing (WCC-2015), held in Daejeon, Korea, in October 2015.

The conference was organized by the IFIP Technical Committee on Artificial Intelligence (Technical Committee 12) and its Working Groups. TC12 was formed in 1989. It now has members representing 33 national computer societies, together with representatives of the ACM and the IEEE, and has nine working groups covering major topics in artificial intelligence (AI). The aims of TC12 are:

- To foster the development and understanding of AI and its applications worldwide.
- To promote interdisciplinary exchanges between AI and other fields of information processing.
- To contribute to the overall aims and objectives and further development of IFIP as the international body for information processing.

TC12 carries out these activities through its nine working groups that are as follows:

WG 12.1 - Knowledge Representation and Reasoning led by Dr. Matthias Thimm

WG 12.2 - Machine Learning and Data Mining led by Prof. Zhongzhi Shi

WG 12.3 - Intelligent Agents led by Prof. Helder Coelho

WG 12.4 - Web Semantics led by Prof. Elizabeth Chang

WG 12.5 - Artificial Intelligence Applications led by Prof. Ilias Maglogiannis

WG 12.6 - Knowledge Management led by Prof. Eunika Mercier-Laurent

WG 12.7 - Social Networking Semantics and Collective Intelligence led by Dr. Pieter De Leenheer

WG 12.8 - Intelligent Bioinformatics and Biomedical Systems led by Prof. Phoebe Chen

WG 12.9 - Computational Intelligence led by Prof. Tharam Dillon

For AITP 2015, we received submissions from authors that highlighted the benefits of AI technology for industry and services. We also received papers that highlighted the benefits of using AI in interdisciplinary areas such as bioinformatics. All papers were reviewed by three members and in a very few cases by at least two members of our Program Committee and final decisions were made by the program chair. The best papers were selected for the conference as long papers and are included in this volume. The international nature of IFIP is amply reflected in the large number of countries represented here.

I thank the Program Committee members, for all their efforts and for reviewing papers under a very tight deadline and maintaining the high quality of the conference. This is the latest in a series of conferences organized by IFIP Technical Committee 12

dedicated to the techniques of artificial intelligence and their real-world applications. The wide range and importance of these applications is clearly indicated by the papers in this volume. Further information about TC12 can be found on our website at <http://www.ifiptc12.org>.

August 2015

Tharam Dillon

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