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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. A federation for societies working in information processing, IFIP's aim is two-fold: to support information processing in the countries of its members and to encourage technology transfer to developing nations. As its mission statement clearly states:

IFIP is the global non-profit federation of societies of ICT professionals that aims at achieving a worldwide professional and socially responsible development and application of information and communication technologies.

IFIP is a non-profit-making organization, run almost solely by 2500 volunteers. It operates through a number of technical committees and working groups, which organize events and publications. IFIP's events range from large international open conferences to working conferences and local seminars.

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 generally smaller and occasionally 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.

IFIP distinguishes three types of institutional membership: Country Representative Members, Members at Large, and Associate Members. The type of organization that can apply for membership is a wide variety and includes national or international societies of individual computer scientists/ICT professionals, associations or federations of such societies, government institutions/government related organizations, national or international research institutes or consortia, universities, academies of sciences, companies, national or international associations or federations of companies.

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Eunika Mercier-Laurent · Danielle Boulanger (Eds.)

Artificial Intelligence for Knowledge Management


5th IFIP WG 12.6 International Workshop, AI4KM 2017

Held at IJCAI 2017

Melbourne, VIC, Australia, August 20, 2017

Revised Selected Papers

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Preface

IJCAI 2017 <https://www.ijcai.org/proceedings/2017/> was more diversified than the previous, covering all fields of AI. We did not find “Knowledge Management,” but main components were considered, such as: knowledge representation, dynamics of knowledge, knowledge base, knowledge transfer, shared knowledge, knowledge engineering, visual knowledge, and combining knowledge with deep convolutional neural networks.

Understanding the benefits of Knowledge Management for research, organizations and businesses and application is still a challenge for many. The overall process involving people, big data, and all kinds of computers and applications has a potential of acceleration discovery and innovation from organized and optimized flow of knowledge. This book’s aim is to challenge researchers and practitioners to better explore all of AI fields and integrate world feedback from experience.

Knowledge Management is a large multidisciplinary field rooted in Management and Artificial Intelligence. AI brought forth the way of thinking, knowledge modeling, knowledge processing, and problem solving techniques. Knowledge is one of the intangible capitals that influence the performance of organizations and their capacity to innovate. Since the beginning of the KM movement in the early nineties, companies and nonprofit organizations have experimented with various approaches.

After the first AI4KM (Artificial Intelligence for Knowledge Management) organized by IFIP (International Federation for Information Processing) group TC12.6 (Knowledge Management) in partnership with the European Conference on Artificial Intelligence (ECAI 2012), and the second workshop held during the Federated Conferences on Computer Science and Information Systems (Fedcsis 2014) in conjunction with the Knowledge Acquisition and Management conference (KAM). The third manifestation has begun a partnership with the International Joint Conference on Artificial Intelligence (IJCAI) since 2015. The fourth AI4KM was held during IJCAI 16, New York and the fifth in Melbourne, Australia, co-located with IJCAI 17.

The objective of this multidisciplinary conjunction is still to raise the interests of AI researchers and practitioners in Knowledge Management challenges, to discuss methodological, technical, and organizational aspects of AI used for Knowledge Management, and to share the feedback on KM applications using AI.

We would like to thank the members of the Program Committee, who reviewed the papers and helped put together an interesting program in Melbourne. We would also like to thank all authors and our invited talks Dr. Dickson Lukose, Artificial Intelligence Scientist and Data Scientist, GCs Agile, and Bao QuocVo from the School of Software and Electrical Engineering, Faculty of Science, Engineering and Technology, Swinburne University of Technology. Finally, our thanks go out to the local Organizing Committee and all the supporting institutions and organizations.

This volume contains selected papers presented during the workshop. After the presentation, the authors were asked to extend their proposals by highlighting their

original thoughts. The selection focused on new contributions in any research area concerning the use of all AI fields for Knowledge Management. An extended Program Committee then evaluated the last versions of the proposals, leading to these proceedings.

The first article is devoted to Knowledge Management in corporations based on synergy between people and technology. The author points out the barriers and benefits of such an approach.

This is followed by an overview of IT tools for management of Knowledge Processes; the authors discuss their efficiency.

The next article titled “Selected Knowledge Management Aspects in Modern Education,” put emphasis on learning organization. The long-life learning should be based on Knowledge Management principles and combine various methods available.

The management of IT projects is more efficient and smarter with Knowledge Management, allowing the reuse and optimizing tasks with AI techniques.

The authors of “Dynamics Aspects of Knowledge Evolution,” propose introducing a knowledge adoption process and an ontology-aided encapsulation knowledge model to track the changes in Knowledge Bases.

This article is then followed by those describing efforts in preservation of craftsmen know-how in Morocco through four stages of knowledge modeling for future uses.

With the rising concern surrounding planet protection, eco-design is now practiced in companies. Aiming to share eco-design practice, this article proposes modeling the related knowledge and experience.

The next article concerns the influence of stress on crisis management. Authors define a model to predict and measure the impact of stress on actors in a given situation on collaborative crisis management.

The authors of “Detecting Influential Users in Social Networks: Analysing Graph-Based and Linguistic Perspectives,” deal with a very hot topic of influence and especially bad influence via social networks using natural language processing.

The last article is related to the previous as it addresses the problem of global security and focuses on video analysis with the aim of preventing terrorist actions.

The above papers cover machine learning, knowledge models, KM and Web, Knowledge capturing and learning, and KM and AI intersection.

We hope that you will enjoy reading these papers.

May 2019

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