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Malek Mouhoub · Samira Sadaoui
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Recent Trends and Future Technology in Applied Intelligence

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Preface

There has been a steady increase in demand for efficient, dynamic, and intelligent systems for solving complex real-world problems. Applied intelligence technologies have been used to build smart machines that can solve such problems of significant complexity. The International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems (IEA/AIE), sponsored by the International Society of Applied Intelligence (ISAI), concentrates on applied intelligence as well as its applications to complex problem-solving. The annual conference has become an important international event in the field of applied intelligence, where researchers and industrial communities communicate with each other and promote the development of advanced research in applied intelligence.

The 31st International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems (IEA/AIE 2018) was organized by Concordia University and sponsored by the International Society of Applied Intelligence (ISAI). It is with great pleasure that we present to you the proceedings of IEA/AIE 2018. The conference was held in the vibrant city of Montreal during June 25–28, 2018. Montreal is becoming an artificial intelligence hub with the recent large provincial and federal funding in the area of machine learning in addition to investments from tech giants such as Google, Microsoft, and Facebook.

IEA/AIE 2018 received 146 submissions from Canada and the following 44 countries: Algeria, Argentina, Australia, Austria, Belgium, Brazil, Chile, China, Cuba, Czech Republic, Egypt, France, Germany, Greece, Hong Kong, India, Iran, Iraq, Italy, Japan, Jordan, Luxembourg, Malaysia, Morocco, The Netherlands, New Zealand, Nigeria, Norway, Oman, Pakistan, Poland, Portugal, Saudi Arabia, Singapore, Spain, Sweden, Switzerland, Taiwan, Tanzania, Tunisia, Turkey, UAE, UK and the USA. Each submission was carefully reviewed by three members of the Program Committee. For the final conference program and for inclusion in these proceedings, 35 regular papers, with allocation of 12 pages each, were selected. Additionally, 29 short papers, with allocation of six to eight pages each, were accepted. These papers cover a wide range of artificial intelligence topics, including data mining and machine learning, knowledge representation, natural language processing, robotics, planning and scheduling, constraint programming, and evolutionary computation. Finally, 22 papers accepted in the following four special tracks are also included in these proceedings: Artificial Intelligence, Law and Justice Track; Data Science, Privacy, and Security Track; Intelligent Systems Approaches in Information Extraction Track; and Internet of Things and Ubiquitous Computing and Big Data Track.

The conference program was enriched by three keynote presentations and tutorials. The keynote speakers were Behrouz Far, University of Calgary, Wahab Hamou-Lhadj, Concordia University, and Guy Lapalme, University of Montreal. We would like to thank the Program Committee members for their time, dedication, and effort in providing valuable reviews. We thank all the authors for submitting their contributions and

the authors of accepted papers for preparing the final version of their papers and presenting their work at the conference. We would like to thank both Concordia University and ISAI, as well as every member of the organization team for their help and support. Finally, we are very grateful to the development team of the EasyChair conference system. This system made the process of paper submission and evaluation, as well as the preparation of the proceedings, easy for us and saved us a significant amount of time.

April 2018

Malek Mouhoub
Samira Sadaoui
Otmame Ait Mohamed
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