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Artificial Neural Networks and Machine Learning – ICANN 2016

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Proceedings, Part I

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Preface

It is our honor and our pleasure to present this two-volume proceedings of the 25th International Conference on Artificial Networks (ICANN 2016) held during September 6–9, 2016, in Barcelona, Spain, and organized by the Universitat Politècnica de Catalunya and the Universitat Pompeu Fabra. The annual ICANN is the flagship conference of the European Neural Network Society (ENNS). After 25 editions, it is clear that ICANN's is a story of success. The field has grown and matured during all these years and the conference series has maintained its rank among the most prestigious conferences in the world. A special social gathering brought together all ENNS members to celebrate its 25th anniversary. Professor Teuvo Kohonen was the first president of ENNS serving the term 1990–1992. The office was then taken by John G. Taylor, Erkki Oja, Wlodek Duch, and Alessandro Villa, who comes to the end of his last term. A new president of ENNS was elected and Barcelona is a very appropriate location for this anniversary edition. It has a long tradition in neuroscience going back to Santiago Ramón y Cajal, more than one century ago, who, after moving to the University of Barcelona, made his pioneering neuroanatomical studies in this city. We are sure that such a nice environment and intense program of activities will leave a positive trace in our memories.

The field of artificial neural networks evolved tremendously in the past quarter of a century, but the goal to bring together researchers from two worlds, i.e., information sciences and neurosciences, is still fresh and necessary. The conference gathers people not only from Europe but also from the rest of the globe. The 25th ICANN united presenters from 42 countries from all continents. ICANN 2016 was tightly organized in partnership with ENNS. This governance has been guided by not-for-profit procedures that allowed us to keep very low congress fees compared with international standards. Moreover, we consolidated the practice of offering a subscription to ENNS to all ICANN delegates who present a scientific communication.

The Scientific and Reviewing Committee selected 169 contributions, after a peer-review process of 227 submissions, which are published in these two proceedings volumes. The variety of topics covered by all these contributions proves the maturity and, at the same time, the vitality of the field of artificial neural networks. Besides, this year, we introduced short extended abstract contributions in order to encourage top-level scholars to join the conference without the need to submit a full paper. This opportunity appeared very attractive also to researchers who are interested in presenting results that could not justify a full paper submission. Hence, the implementation of this scheme eventually produced 122 full papers and 47 short extended abstracts.

The type of submission was not the ultimate criterion in assigning the submitters to an oral or a poster presentation. Papers were equally good and attributed to 94 oral and 75 poster presentations following, in the vast majority of the cases, the preference expressed by the authors. The proceedings of the 47 short presentations have been grouped together following the rules of the Publisher. Oral presentations were divided

into 18 sessions following the usual dual track, initially intended as the brain-inspired computing track and machine-learning research track. As in the past editions the dual track became track A and track B, because many papers presented an interdisciplinary approach and track C for the posters. In addition, ICANN had eight plenary talks by internationally renowned speakers, in particular one lecture sponsored by ENNS, the John G. Taylor Memorial Lecture given by Erki Oja, past president of ENNS. Several satellite workshops completed the intensive program of ICANN 2016.

This scientific event would not have been possible without the participation of many people. We want to thank everyone who contributed, in one way or another, to the success of the conference and the publication of the proceedings. We want to express our deepest gratitude to the members of the Executive Committee of the ENNS, who have accepted the proposal of Barcelona organizing the event. We are grateful for the work of the Scientific and Reviewing Committee and all reviewers who worked under strong time constraints during the compilation of the proceedings. The conference would have been impossible without the contribution of all members of the Organizing Committees. We want to thank the outstanding work by the ENNS, UPC, and UPF personnel. We want to thank, particularly, the work of Paolo Masulli, Lara Escuain, and Daniel Malagarriga. The conference would not have been a reality without the help of Caroline Kleinheny. Finally, we would like to thank Anna Kramer, Frank Holzwarth, and Alfred Hofmann from Springer for their help with the tough publication project. We acknowledge, too, all authors who contributed to the volumes and shared their ideas during the conference. We are sure that the papers appearing in these volumes will contribute to the field of artificial neural networks with many new and inspiring ideas that will help other concepts flourish in the future.

July 2016

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