The 2011 edition of ICANNGA marked the 10th anniversary of the conference series, started in 1993 in Innsbruck, Austria, where it was decided to have a similar scientific meeting organized biennially. Since then, and with considerable success, the conference has taken place in Ales in France (1995), Norwich in the UK (1997), Portorož in Slovenia (1999), Prague in the Czech Republic (2001), Roanne in France (2003), Coimbra in Portugal (2005), Warsaw in Poland (2007), and Kuopio in Finland (2009), while this year, for the second time, in Slovenia, in its capital Ljubljana (2011).

The Faculty of Computer and Information Science of the University of Ljubljana was pleased and honored to host this conference. We chose the old university palace as the conference site in order to keep the traditionally good academic atmosphere of the meeting. It is located in the very centre of the capital and is surrounded by many cultural and touristic sights.

The ICANNGA conference was originally limited to neural networks and genetic algorithms, and was named after this primary orientation: International Conference on Artificial Neural Networks and Genetic Algorithms. Very soon the conference broadened its outlook and in Coimbra (2005) the same abbreviation got a new meaning: International Conference on Adaptive and Natural computing Algorithms. Thereby the popular short name remained and yet the conference is widely open to many new disciplines related to adaptive and natural algorithms.

This year we received 144 papers from 33 countries. After a peer-review process by at least two reviewers per paper, 83 papers were accepted and included in the proceedings. The papers were divided into seven groups: neural networks, evolutionary computation, pattern recognition, soft computing, system theory, support vector machines, and bio-informatics. The submissions were recommended for oral and for poster presentation. The ICANNGA 2011 plenary lectures were planned to combine several compatible disciplines like adaptive computation (Rudolf Albrecht), artificial intelligence (Ivan Bratko), synthetic biology and biomolecular modelling of new biological systems (Roman Jerala), computational neurogenetic modelling (Nikola Kasabov), and robots with biological brains (Kevin Warwick). We believe these discussions served as an inspiration for future contributions.

One of the traditions of all ICANNGA conferences so far has been to combine pleasantness and usefulness. The cultural and culinary traditions of the organizing country helped to create an atmosphere for a successful and friendly meeting.

We would like to thank the Advisory Committee for their guidance, advice and discussions. Furthermore, we wish to express our gratitude to the Program Committee, the reviewers and sub-reviewers for their substantial work in revising
the papers. Our recognition also goes to Springer, our publisher, and especially to Alfred Hofmann, Editor-in-Chief of LNCS, for his support and collaboration. Many thanks go to the agency Go-mice and its representative Natalija Bah Čad for her help and effort. And last but not least, on behalf of the Organizing Committee of ICANNGA 2011, we want to express our special recognition to all the participants, who contributed enormously to the success of the conference.

We hope that you will enjoy reading this volume and that you will find it inspiring and stimulating for your future work and research.

April 2011

Andrej Dobnikar
Uroš Lotrič
Branko Šter
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