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Adaptive and Natural Computing Algorithms

9th International Conference, ICANNGA 2009
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Revised Selected Papers

Springer

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Preface

The ICANNGA series of conferences has been organized since 1993 and has a long history of promoting the principles and understanding of computational intelligence paradigms within the scientific community. Originally ICANNGA stood for "International Conference on Artificial Neural Networks and Genetic Algorithms," but in 2005 the conference was renamed to "International Conference on Adaptive and Natural Computing Algorithms," while keeping the acronym ICANNGA. The first ICANNGA conference was held in Innsbruck Austria (1993), then Alés in France (1995), Norwich in the UK (1997), Portoroz in Slovenia (1999), Prague in the Czech Republic (2001), Roanne in France (2003), Coimbra in Portugal (2005) and Warsaw in Poland (2007). Continuing this European tradition, the 9th ICANNGA was held in Kuopio, Finland (2009). The vast majority of ICANNGA conferences is organized by and based at a university.

Drawing on the experience of previous events and following the same general model, ICANNGA 2009 combined plenary lectures and technical sessions. Apart from being a widely recognized conference, it enhanced the possibility to exchange opinions through lectures and discussions, provided a great opportunity to meet new colleagues, as well as to renew old friendships and to facilitate the possibilities for international collaborations. As previously, the conference proceedings are published in the Springer LNCS series.

The size of the ICANNGA conference has varied as has the popularity of different topics over the years. This year we had a compact conference. There were 112 papers submitted, which went through a peer-review process by at least two reviewers. Out of these papers 63 were presented. We are confident that it is an optimal number of papers sustaining the high quality of the ICANNGA conference and supporting the publication standard of Springers LNCS. The most popular topics were: neural networks (18), evolutionary computation (15) and learning (13). From these papers about 50% could be classified as applications, and that actually also holds for the submitted papers.

The ICANNGA 2009 plenary lectures were focused on biological and human phenomena. They were presented by distinguished scientists: adaptive modeling of linguistics and social phenomena (Timo Honkela), artificial and cultured neural networks (Kevin Warwick), digital media (Lars Kai Hansen) and systems biology (David Broomhead).

Besides the scientific program, we had the pleasure to organize social events that mirrored the roots of ICANNGA and the local culture. The organizing team was especially happy with the way the conference participants took part in the traditional Finnish events.

All those people who made this conference possible deserve our gratitude. The members of the Organizing Committee worked one and a half years to create this conference edition: Mikko Kolehmainen, Pekka Toivanen, Yrjö Hiltunen, Erkki

Pesonen, Niina Päivinen and Mauno Rönkkö. Especially, we would like to thank our Conference Secretary Karin Koivisto for her tremendous work. Our technical team kept the wheels rolling during the conference and it consisted of the following persons: Teemu Räsänen, Harri Niska, Jukka-Pekka Skön, Jarkko Tiirikainen, Juha Parviainen, Taneli Laavola, Okko Kauhanen, and Marko Jäntti.

We would like to thank the Advisory Committee for giving us this unique opportunity to organize the ICANNGA conference and their continuous support. We are grateful to the Program Committee and reviewers of the conference for their substantial work in refereeing the papers.

We also wish to thank our publisher, especially Alfred Hofmann, Editor-in Chief of LNCS, and Anna Kramer for their support and collaboration.

On behalf of the Organizing Committee we would like to thank all of you who participated in ICANNGA 2009 and contributed to its success.

May 2009

Mikko Kolehmainen
Pekka Toivanen
Bartlomiej Beliczynski

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