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Biologically Inspired Approaches to Advanced Information Technology

Second International Workshop, BioADIT 2006
Osaka, Japan, January 26-27, 2006
Proceedings



Springer

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Preface

This book contains 30 articles and three abstracts of invited talks presented at The Second International Workshop on Biologically Inspired Approaches for Advanced Information Technology (Bio-ADIT 2006) held at Senri Life Science Center, Osaka, Japan, on January 26–27, 2006. Bio-ADIT 2006 follows the success of the first workshop Bio-ADIT 2004, held at the Swiss Federal Institute of Technology, Lausanne (EPFL), Switzerland, in January 2004. The workshop is intended to provide an effective forum for original research results in the field of bio-inspired approaches to advanced information technologies. It also serves to foster the connection between biological paradigms and solutions to building the next-generation information systems. In particular, the aim of the workshop is to explore and discuss how biologically inspired approaches can help in designing the next generation of information systems which, like their biological counterparts, will be capable of adaptation, self-organization, replication, and self-repair.

We were honored to have the participation as invited speakers of three leading researchers in this field: James C. Liao, Rolf Pfeifer, and Toshio Yanagida. The invited talks dealt with the very interesting subjects of bio-inspired approaches to information systems, and provided stimulating ideas to the workshop attendees to pursue further research in this exciting field.

The articles cover a large range of topics including networking, robotics, evolutionary computation, neural computation, biochemical networks, reconfigurable hardware, and machine vision. The contributions range from basic research in biology and in information technology, to more application-oriented developments in software and in hardware. To ensure the content quality, each paper was carefully reviewed by two or three reviewers, and revised according to the reviewers' comments. The papers are divided into 22 oral presentations and 8 poster presentations. The articles published in this book underline the international importance of this field of research, with contributions from China, Germany, India, Japan, Norway, Spain, Sweden, Switzerland, United Kingdom, and USA. It strongly indicates the importance and world-wide impact of the field.

We wish to express our appreciation of the efforts of all the authors who helped to make this book happen. We also gratefully acknowledge the extensive reviewing work carried out by the Technical Program Committee members and additional reviewers. We are indebted to Daniel Mange and Shojiro Nishio, General Co-chairs, for managing the workshop. We would also like to again acknowledge the financial support from the 21st Century Center of Excellence Program of the Ministry of Education, Culture, Sports, Science and Technology

(MEXT) of Japan under the program “New Information Technologies for Building a Networked Symbiosis Environment”. We would like to acknowledge the technical support from IEEE ComSom Japan Chapter.

January 2006

Auke Jan Ijspeert
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Technical Program Committee Co-chairs
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