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Parallel Problem Solving from Nature – PPSN VII

7th International Conference
Granada, Spain, September 7-11, 2002
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Preface

We are proud to introduce the proceedings of the Seventh *International Conference on Parallel Problem Solving from Nature, PPSN VII*, held in Granada, Spain, on 7–11 September 2002. PPSN VII was organized back-to-back with the Foundations of Genetic Algorithms (FOGA) conference, which took place in Torremolinos, Malaga, Spain, in the preceding week.

The PPSN series of conferences started in Dortmund, Germany [1]. From that pioneering meeting, the event has been held biennially, in Brussels, Belgium [2], Jerusalem, Israel [3], Berlin, Germany [4], Amsterdam, The Netherlands [5], and Paris, France [6]. During the Paris conference, several bids to host PPSN 2002 were put forward; it was decided that the conference would be held in Granada with Juan J. Merelo Guervós as General Chairman.

The scientific content of the PPSN conference focuses on problem-solving paradigms gleaned from natural models, with an obvious emphasis on those that display an innate parallelism, such as evolutionary algorithms and ant-colony optimization algorithms. The majority of the papers, however, concentrate on evolutionary and hybrid algorithms, as is shown in the contents of this book and its predecessors. This edition of the conference proceedings has a large section on applications, be they to classical problems or to real-world engineering problems, which shows how bioinspired algorithms are extending their use in the realms of business and enterprise.

In total, this volume contains 90 papers, which were selected from the 181 papers submitted to the conference organizers. This means that slightly fewer than half the papers were accepted for inclusion in the conference proceedings, which, at the same time, means that some papers of good quality could not be selected for publication. Each paper was reviewed by at least three persons, and, in some cases, up to five reviews were necessary to reach a decision. Most papers had four reviews. Thus, we are very grateful to the volunteer reviewers who offered their scientific expertise and time in order to come up with a decision that was as fair as possible. We want also to thank all authors of submitted papers for their participation.

The submission procedure was developed and maintained by Pedro Castillo Valdivieso and Juan J. Merelo Guervós, inspired by the one developed by them for the previous PPSN conferences. The submission, reviewing and Chairperson's information systems were written in Perl and used a PostgreSQL relational database system as the back-end. The submission process was mostly smooth, and the system could take the heaviest loads without a glitch. All in all, the system dealt with around 50 000 requests, with several requests per minute at the moments of heaviest load.

Paper assignment was made using a combined greedy/evolutionary algorithm that took into account keyword matches among reviewers and papers. The assignment could be considered successful, since few reviewers declined to review

their assigned papers because of a lack of relevant expertise; at the same time, the average confidence in decisions was 1.7±0.7 (that is, between "Somewhat High" and "Very High", but closer to the former).

As usual, PPSN VII was a poster-only conference; that is, all papers were presented as posters to facilitate personal discussion and the exchange of ideas between the presenter and the audience. Although this might imply a smaller audience than in the case of an oral presentation, the presenter of a paper has a better chance of getting in touch with the people most interested in her/his topic. Consequently, posters are not "second-class" papers, as they are usually considered in some other conferences – they are just the means of presenting. The 90 papers presented in the conference were grouped into five sessions of about 18 papers each. To simplify the orientation within a poster session and to allow the audience to get a global overview of all sessions, each poster session was introduced by a person belonging to the organizing committee who gave a brief overview of all papers presented within a session.

Only the three invited speakers presented a one-hour oral presentation of their research results, geared towards providing inspiration to the conference attendees. Alexander Nareyek (CMU), Roderic Guigó (IMIM, Barcelona, Spain), and William Hart (Sandia Labs, NM, USA), gave keynote speeches on topics that impinge on natural computation: the human genome project, applications of artificial intelligence to computer games, and the relationship between the fields of evolutionary computation and optimization.

Before the technical sessions began on September 9th, two one-day events took place. Five workshops were organized at the Palacio de Congresos on Sept. 7th, and eleven tutorials took place in the same place the next day. We would like to thank the corresponding chairs, David W. Corne (University of Reading, UK) and Marc Schoenauer (INRIA, France).

Finally, we would like to thank the Departamento de Arquitectura y Tecnología de Computadores of the University of Granada, and the regional and national governments who provided monetary support to the conference. Julio Ortega took the job of filling all forms, and submitting and following-up on them, and we are deeply indebted for this. EvoNet, the network of excellence in evolutionary computation sponsored by the European Union, provided support in the form of travel grants for five students.

Pedro Castillo took the tedious job of helping to maintain the website. The other members of the GeNeura team (Maribel García, José Carpio, Víctor Rivas, Javi García, Brad Dolin, Linda Testa, Gustavo Romero, Jaime Anguiano, Louis Foucart) also had to put up with some tasks related to the fact that their boss was busy at something else (although that very fact, of course, also relieved them of some burden). The other members of the Departamento de Arquitectura y Tecnología de Computadores and the Departamento de Ciencias de Computación e Inteligencia Artificial also provided invaluable support. We are also very grateful to the users of the submission system who were able to spot bugs and communicate them to us in good time.

We expect that these proceedings will help to take the natural computation field a bit further, to make it more aware of the problems out there, and, finally, to make it conscious of its existence as a whole field, not as a fractured set of fieldlets.

Granada, June 2002

Juan Julián Merelo Guervós
Panagiotis Adamidis
Hans-Georg Beyer
José Luis Fernández Villacañas
Hans-Paul Schwefel

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