

LNCS 4150

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Ant Colony Optimization and Swarm Intelligence

5th International Workshop, ANTS 2006
Brussels, Belgium, September 2006
Proceedings



Springer

TP301.6-53
A636
2006
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Springer



E200604025

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Library of Congress Control Number: 2006931489

CR Subject Classification (1998): F.2.2, F.1.1, G.1, G.2, I.2, C.2.4, J.1

LNCS Sublibrary: SL 1 – Theoretical Computer Science and General Issues

ISSN 0302-9743
ISBN-10 3-540-38482-0 Springer Berlin Heidelberg New York
ISBN-13 978-3-540-38482-3 Springer Berlin Heidelberg New York

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Printed in Germany

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India
Printed on acid-free paper SPIN: 11839088 06/3142 5 4 3 2 1 0

Preface

ANTS – The International Workshop on Ant Colony Optimization and Swarm Intelligence is now at its fifth edition. The series started in 1998 with the organization of ANTS 1998. At that time the goal was to gather in a common meeting those researchers interested in ant colony optimization: more than 50 researchers from around the world joined for the first time in Brussels, Belgium, to discuss *ant colony optimization* and *swarm intelligence* related research. A selection of the best papers presented at the workshop was published as a special issue of the *Future Generation Computer Systems* journal (Vol. 16, No. 8, 2000). Two years later, ANTS 2000, organized again in Brussels, attracted more than 70 participants. The 41 extended abstracts presented as talks or posters at the workshop were collected in a booklet distributed to participants, and a selection of the best papers was published as a special section of the *IEEE Transactions on Evolutionary Computation* (Vol. 6, No. 4, 2002).

After these first two successful editions, it was decided to make of ANTS a series of biannual events with official workshop proceedings. The third and fourth editions were organized in September 2002 and September 2004, respectively. Proceedings were published by Springer within the *Lecture Notes in Computer Science* (LNCS) series.

The proceedings of ANTS 2002, LNCS Volume 2463, contained 36 contributions: 17 full papers, 11 short papers, and 8 extended abstracts, selected out of a total of 52 submissions. Those of ANTS 2004, LNCS Volume 3172, contained 50 contributions: 22 full papers, 19 short papers, and 9 extended abstracts, selected out of a total of 79 submissions.

Swarm intelligence is a rapidly growing field and the number of papers submitted to the 2006 edition reflects this growth: we received 115 submissions, a 45% increase with respect to the previous edition. Besides the higher number of researchers in the field, this increase can also be explained by the higher number of submitted papers that cover important subjects such as particle swarm optimization, swarm robotics, or ant-based clustering. ANTS is therefore slowly removing the initial bias towards ant colony optimization and becoming more and more the conference of the whole swarm intelligence community.

The higher number of submissions allowed us to increase the selective pressure: only 42% of the submitted papers was accepted for publication (i.e., 27 full papers and 23 short papers). This high selection threshold has made it possible to have a program of the highest standards. In addition to the accepted papers, a small number (12) of extended abstracts was selected for presentation: these are works that, although in a rather preliminary phase, show high potential and are therefore worth being discussed at the workshop.

To conclude this preface, we would like to thank all the people who helped in organizing ANTS 2006. We are very grateful to the authors who submitted

their works; to the members of the International Program Committee and to the additional referees for their detailed reviews; to the IRIDIA people for their enthusiasm in helping with organizational matters; to the Université Libre de Bruxelles for providing rooms and logistic support; and, more generally, to all those contributing to the organization of the workshop. Finally, we would like to thank our sponsors: the IEEE Computational Intelligence Society, COMP2SYS,¹ *AntOptima*,² the Belgian National Funds for Scientific Research, and the French community of Belgium.

June 2006

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¹ A Marie Curie Early Stage Training Site funded by the European Commission. More information is available at iridia.ulb.ac.be/comp2sys.

² More information is available at www.antoptima.com.

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