Mathieu S. Capcarrere
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LNAI 3630

Advances in Artificial Life

**8th European Conference, ECAL 2005
Canterbury, UK, September 2005
Proceedings**

ECAL 2005
European Conference on Artificial Life

Springer

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Springer

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Library of Congress Control Number: 2005931598

CR Subject Classification (1998): I.2, J.3, F.1.1-2, G.2, H.5, I.5, J.4, J.6

ISSN	0302-9743
ISBN-10	3-540-28848-1 Springer Berlin Heidelberg New York
ISBN-13	978-3-540-28848-0 Springer Berlin Heidelberg New York

Springer is a part of Springer Science+Business Media

springeronline.com

Printed in Germany

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India
Printed on acid-free paper SPIN: 11553090 06/3142 5 4 3 2 1 0

Lecture Notes in Artificial Intelligence 3630

Edited by J. G. Carbonell and J. Siekmann

Subseries of Lecture Notes in Computer Science

Preface

The Artificial Life term appeared more than 20 years ago in a small corner of New Mexico, USA. Since then the area has developed dramatically, many researchers joining enthusiastically and research groups sprouting everywhere. This frenetic activity led to the emergence of several strands that are now established fields in themselves. We are now reaching a stage that one may describe as maturer: with more rigour, more benchmarks, more results, more stringent acceptance criteria, more applications, in brief, more sound science. This, which is the natural path of all new areas, comes at a price, however. A certain enthusiasm, a certain adventurousness from the early years is fading and may have been lost on the way. The field has become more reasonable. To counterbalance this and to encourage lively discussions, a conceptual track, where papers were judged on criteria like importance and/or novelty of the concepts proposed rather than the experimental/theoretical results, has been introduced this year.

A conference on a theme as broad as Artificial Life is bound to be very diverse, but a few tendencies emerged. First, fields like 'Robotics and Autonomous Agents' or 'Evolutionary Computation' are still extremely active and keep on bringing a wealth of results to the A-Life community. Even there, however, new tendencies appear, like collective robotics, and more specifically self-assembling robotics, which represent now a large subsection. Second, new areas appear. 'Morphogenesis and Development' which used to be the subject of only a few papers, is now one of the largest subsections, and seems to be on the brink of becoming a field of its own. Finally, most classical themes of A-Life research like 'Artificial Chemistry', 'Ant-Inspired Systems', 'Cellular Automata', 'Self-Replication', 'Social Simulations' or 'Bio-realist Simulations' are still going strong and are well represented within this volume.

The conference this year has proven a great success with exactly 150 submissions, which is an all time high. This has allowed the programme committee to be fairly selective in its choice with only 74 papers accepted for full publication (49.3%). To avoid delaying the diffusion of novel ideas contained in works that were either less mature but promising, or controversial, a further 20 papers (13.3%) will be presented as posters but are published in full in these proceedings. The final selection by the organizing committee was greatly helped by the great professionalism of the programme committee. More than 95% of the reviews were done in time, and thus, all papers received at least 2 reviews with more than 88% of them receiving 3. Each paper that happened to be controversial was re-reviewed by the organizing committee and its acceptance or rejection decided individually.

Finally, the 'E' of ECAL stands for 'European', but this adjective, a legacy from its origin, remains true only in terms of the geographical location of the conference itself. We received papers from more than 40 countries, from Japan

to Brazil, from Norway to Australia, from Russia to China. This is great news not only for the conference but for the vitality of the field, and this great cultural mix will prove very fruitful at the conference.

To finish this preface, we would like to thank all the people who helped to organize ECAL 2005, and in particular, the members of the programme committee, the secretaries of the computing laboratory, Kate Friends and Jeanny Oatley and the webmaster, Andy Secker.

June 2005

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