Lecture Notes in Artificial Intelligence 3830

Edited by J. G. Carbonell and J. Siekmann

Subseries of Lecture Notes in Computer Science

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Environments for Multi-Agent Systems II

Second International Workshop, E4MAS 2005
Utrecht, The Netherlands, July 25, 2005
Selected Revised and Invited Papers

Springer

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Library of Congress Control Number: 2006921545

CR Subject Classification (1998): I.2.11, I.2, C.2.4

LNCS Sublibrary: SL 7 – Artificial Intelligence

ISSN 0302-9743
ISBN-10 3-540-32614-6 Springer Berlin Heidelberg New York
ISBN-13 978-3-540-32614-4 Springer Berlin Heidelberg New York

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India
Printed on acid-free paper SPIN: 11678809 06/3142 5 4 3 2 1 0

Preface

In the past two years the environment in multiagent systems has become increasingly important and is now becoming a focus of research in its own right. Yet, the environment in multiagent systems has been studied before. So the obvious question then is: Why does the environment attract the attention of a broader community of researchers right now?

The answer to this question is manifold. First, current research on environments is built on the *receptive ground* of early work. Pioneers such as Demazeau, Parunak, Ferber, Odell, Omicini and Zambonelli have been stressing the importance of the environment in multiagent systems for almost a decade.

Second, current research on environments is *well organized*. The workshop series on Environments for Multiagent Systems (E4MAS) provides the breeding ground for coordinating research on environments. E4MAS provides an active forum for discussion and exchange of ideas. The constructive atmosphere of the E4MAS workshops and the critical attitude of the attendees stimulate research in the growing community.

Third, researchers interested in environments come from various backgrounds. The notion of environment exceeds specific types of agency. The environment is important for simple ant-like agents as well as for complex cognitive agents. The environment provides a challenging area for *synergetic research* on multiagent systems in general.

And last but not least, the perspective on the role of the environment in multiagent systems has undergone a fundamental change in the last two years. Whereas environment and "infrastructure" are traditionally considered equivalent, recent research considers the environment as a *first-order design abstraction* in multiagent systems. Several researchers have demonstrated that the environment provides a building block that can be used creatively in the design of multiagent system applications. Distinguishing between agent and environment responsibilities supports separation of concerns in multiagent systems, which is a prerequisite for good engineering practice.

This volume collects selected and revised papers of the second E4MAS Workshop, completed with a number of invited papers of prominent researchers active in the domain. The papers represent the full life-cycle of environment engineering, including theoretical analysis, models, mechanisms, architecture and design, and applications. We hope that the work presented in this book stimulates further exploration and exploitation of the environment in multiagent systems.

December 20, 2005

Danny Weyns
Leuven, Belgium

Organization

E4MAS 2005 was organized in conjunction with the 4th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2005), Utrecht, The Netherlands, July 25, 2005.

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http://www.cs.kuleuven.ac.be/∼distrinet/events/e4mas/

Acknowledgements

We are grateful to the PC members for their critical review work. We also thank Elke Steegmans, Alexander Helleboogh, Kurt Schelfthout, Tom De Wolf, Koen Mertens, Nelis Boucké and Tom Holvoet for their efforts for E4MAS. A special word of thanks to Tom De Wolf for managing the website.

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