

Computational Conflicts

Heinz Jürgen Müller • Rose Dieng (Eds.)

Computational Conflicts

Conflict Modeling for Distributed Intelligent Systems
With contributions by numerous experts

With 70 Figures



Springer

Editors

Dr. Heinz Jürgen Müller
Technologiezentrum Darmstadt FE14k
Deutsche Telekom AG
64307 Darmstadt, Germany
E-mail: muellerj@tzd.telekom.de

Dr. Rose Dieng
INRIA – Sophia Antipolis
2004, route des Lucioles
06902 Sophia Antipolis Cedex, France
E-mail: Rose.Dieng@sophia.inria.fr

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Preface

One aim of Artificial Intelligence is to model the world (facts, relationships, actors, action, behaviour etc.) in computers in order to build systems to enhance people's living. Since conflicts are part of our world the question is how to model them and how to model human behaviour in the context of conflicts. This is what the book is about and our aim is to convince our readers that it is worth attacking real world modelling problems through thinking in terms of conflicts, their management, their resolution strategies or their avoidance.

Research from several disciplines contribute in a deeper understanding and management of conflicts among human agents or among artificial agents: Cognitive Psychology, Philosophy, Social Sciences, Organization Sciences, CSCW, Distributed Artificial Intelligence (in particular, Multi-agent systems), Software Engineering (in particular Requirement Engineering), Concurrent Engineering, Design, Knowledge Representation, Knowledge Engineering, Knowledge Management, Knowledge-Based Systems, Game Theory...

Such multidisciplinary research helps to understand the different facets of conflicts, to build a formal theory of conflicts for reasoning about them, to develop applications relying on interacting computational agents that may be in conflict, to offer generic strategies for solving or managing such conflicts. Therefore, this book gives an overview of different viewpoints from several disciplines, and aims at answering to several questions:

- What is a conflict? What is the function of conflicts, both at the intra-individual level and at the inter-individual level ?
- What are the basic ingredients of conflicts? How do conflicts emerge, what are their grounds?
- How can conflicts be modelled? What are the adequate formalisms to model them?
- What is the influence of conflicts on multi-agent applications?

Editing a book is a complex activity and we are happy to say that though there is a huge potential for conflicts there were no conflicting situations during the editing process. This fact is due to the patience of the numerous authors of this book, who worked hard to write excellent chapters. We deeply thank all the authors for their high-quality contributions. Moreover we are grateful for the assistance of Christian Schmitt who was responsible for producing the corporate look of the book which was a tough task. His work was supported by Bruno Beaufils. His deep knowledge of LaTeX helped us a lot to get things work.

H. Jürgen Müller
Rose Dieng

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