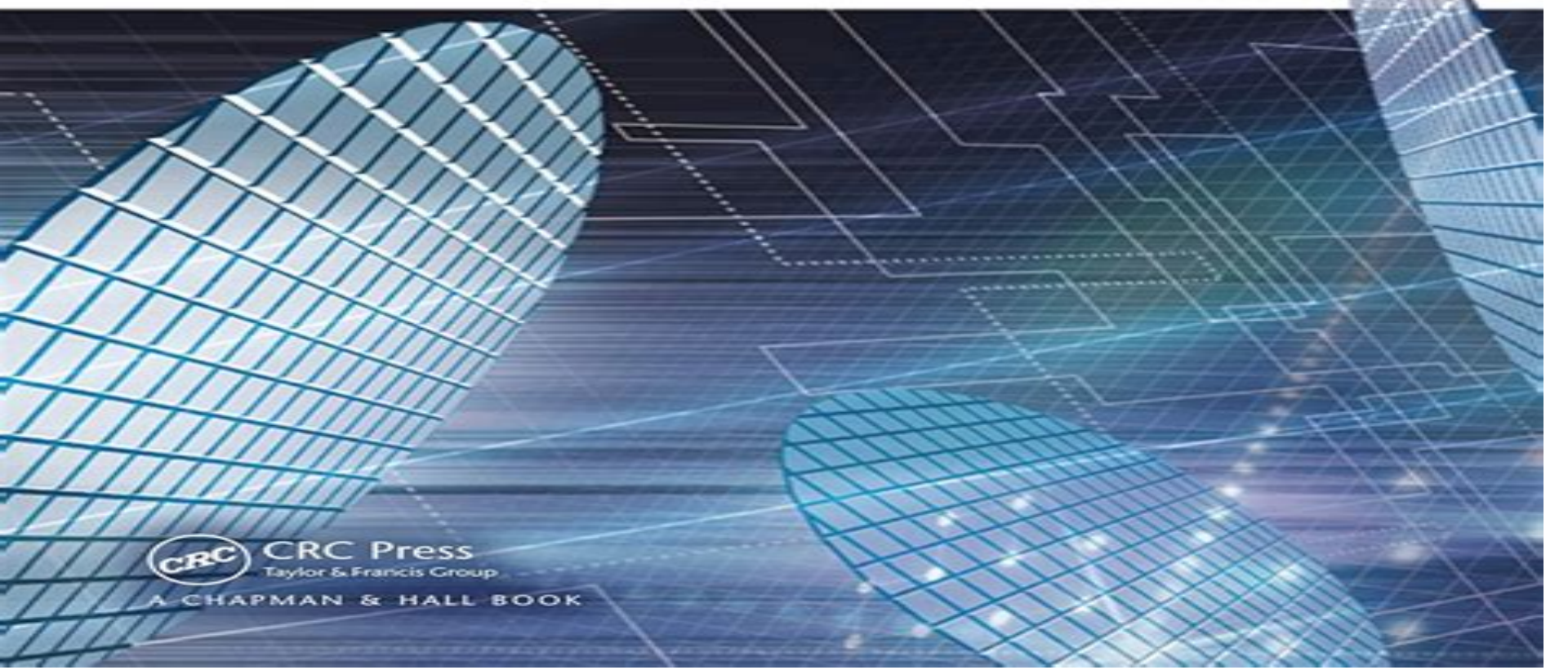


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Agent-Based Modeling and Simulation with Swarm

Hitoshi Iba



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Foundations of Fuzzy Logic and Semantic Web Languages Umberto Straccia, 2016-04-19 Managing vagueness fuzziness is starting to play an important role in Semantic Web research with a large number of research efforts underway Foundations of Fuzzy Logic and Semantic Web Languages provides a rigorous and succinct account of the mathematical methods and tools used for representing and reasoning with fuzzy information within Semantic

X-Machines for Agent-Based Modeling Mariam Kiran, 2020-09-30 Agent based models have shown applications in various fields such as biology economics and social science Over the years multiple agent based modeling frameworks have been produced allowing experts with non computing background to easily write and simulate their models However most of these models are limited by the capability of the framework the time it takes for a simulation to finish or how to handle the massive amounts of data produced FLAME Flexible Large scale Agent based Modeling Environment was produced and developed to address these issues This book contains a comprehensive summary of the field covers the basics of FLAME and shows how concepts of X machines can be stretched across multiple fields to produce agent models It has been written with several audiences in mind First it is organized as a collection of models with detailed descriptions of how models can be designed especially for beginners A number of theoretical aspects of software engineering and how they relate to agent based models are discussed for students interested in software engineering and parallel computing Finally it is intended as a guide to developers from biology

economics and social science who want to explore how to write agent based models for their area of research Book jacket

Agent-Based Models Nigel Gilbert, 2008 Aimed at readers with minimal experience in computer programming this brief book provides a theoretical and methodological rationale for using ABM in the social sciences It goes on to describe some carefully chosen examples from different disciplines illustrating different approaches to ABM It concludes with practical advice about how to design and create ABM a discussion of validation procedures and some guidelines about publishing articles based on ABM

Agent-based Modeling and Simulation S. Taylor, 2014-08-27 Operational Research OR deals with the use of advanced analytical methods to support better decision making It is multidisciplinary with strong links to management science decision science computer science and many application areas such as engineering manufacturing commerce and healthcare In the study of emergent behaviour in complex adaptive systems Agent based Modelling Simulation ABMS is being used in many different domains such as healthcare energy evacuation commerce manufacturing and defense This collection of articles presents a convenient introduction to ABMS with papers ranging from contemporary views to representative case studies The OR Essentials series presents a unique cross section of high quality research work fundamental to understanding contemporary issues and research across a range of Operational Research OR topics It brings together some of the best research papers from the esteemed Operational Research Society and its associated journals also published by Palgrave Macmillan

Multi-Agent Systems and Agent-Based Simulation Jaime S. Sichman, Rosaria Conte, Nigel Gilbert, 1998-12-18 Fifteen papers were presented at the first workshop on Multi Agent Systems and Agent Based Simulation held as part of the Agents World conference in Paris July 4 6 1998 The workshop was designed to bring together two developing communities the multi agent systems researchers who were the core participants at Agents World and social scientists interested in using MAS as a research tool Most of the social sciences were represented with contributions touching on sociology management science economics psychology environmental science ecology and linguistics The workshop was organised in association with SimSoc an informal group of social scientists who have arranged an irregular series of influential workshops on using simulation in the social sciences beginning in 1992 While the papers were quite heterogeneous in substantive domain and in their disciplinary origins there were several themes which recurred during the workshop One of these was considered in more depth in a round table discussion led by Jim Doran at the end of the workshop on Representing cognition for social simulation which addressed the issue of whether and how cognition should be modelled Quite divergent views were expressed with some participants denying that individual cognition needed to be modelled at all and others arguing that cognition must be at the centre of social simulation

Multi-Agent-Based Simulation VI Jaime S. Sichman, Luis Antunes, 2006-03-10 This book constitutes the thoroughly refereed post proceedings of the 6th International Workshop on Multi Agent Based Simulation MABS 2005 held in Utrecht The Netherlands in July 2005 as an associated event of AAMAS 2005 the main international conference on autonomous agents and multi agent systems The 12

revised full papers presented together with 1 invited talk were carefully reviewed. The papers are organized in topical sections on coalition emergence theories and models applications and environments.

Multi-Agent and Multi-Agent-Based Simulation Paul Davidsson, Brian Logan, Keiki Takadama, 2005-02-22. This volume presents revised and extended versions of selected papers presented at the Joint Workshop on Multi Agent and Multi Agent Based Simulation a workshop federated with the 3rd International Joint Conference on Autonomous Agents and Multiagent Systems AAMAS 2004 which was held in New York City USA July 19-23 2004. The workshop was in part a continuation of the International Workshop on Multi Agent Based Simulation MABS series. Revised versions of papers presented at the four previous MABS workshops have been published as volumes 1534 1979 2581 and 2927 in the Lecture Notes in Artificial Intelligence series. The aim of the workshop was to provide a forum for work in both applications of multi agent based simulation and the technical challenges of simulating large multi agent systems MAS. There has been considerable recent progress in modelling and analyzing multi agent systems and in techniques that apply MAS models to complex real world systems such as social systems and organizations. Simulation is an increasingly important strand that weaves together this work. In high risk high cost situations simulations provide critical cost benefit leverage and make possible explorations that cannot be carried out in situ. Multi agent approaches to simulating complex systems are key tools in interdisciplinary studies of social systems. Agent based social simulation ABSS research simulates and synthesizes social behavior in order to understand real social systems with properties of self organization scalability robustness and openness. In the MAS community simulation has been applied to a wider range of MAS research and design problems from models of complex individual agents playing sophisticated internal mechanisms to models of large scale societies of relatively simple agents which focus more on the interactions between agents.

Theoretical and Practical Frameworks for Agent-Based Systems Zhang, Yu, 2012-05-31. Many everyday dilemmas existing in the real world are complex and difficult to solve or fix ranging from tax evasion to dispatching taxis to scheduling patient visits in hospitals and much more. Within these complicated problems however lies the potential to be simplified or solved by intelligent agents and multi agent systems. Theoretical and Practical Frameworks for Agent Based Systems tackles these real problems and many more bringing the theoretical research of intelligent agents to researchers and practitioners in academia government and innumerable industries. Professionals and experts in every field ranging from education to healthcare and beyond will find this reference to be essential in the understanding of agents and researchers currently working in the field of intelligent agents will benefit from this exciting examination of practical applications.

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