The 4rd International Workshop on Multi-Agent Systems and Simulation (MAS&S): Engineering Complex Systems through Agent-Based Modeling and Simulation, MALLOW-MAS&S'10

(Introductory Essay of the Workshop)

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Abstract

Multi-agent systems (MASs) provide powerful models for representing both real-world systems and applications with an appropriate degree of complexity and dynamics. Several research and industrial experiences have already shown that the use of MASs offers advantages in a wide range of application domains (e.g. financial, economic, social, logistic, chemical, engineering). When MASs represent software applications to be effectively delivered, they need to be validated and evaluated before their deployment and execution, thus methodologies that support validation and evaluation through simulation of the MAS under development are highly required. In other emerging areas (e.g. ACE, ACF), MASs are designed for representing systems at different levels of complexity through the use of autonomous, goal-driven and interacting entities organized into societies which exhibit emergent properties The agent-based model of a system can then be executed to simulate the behavior of the complete system so that knowledge of the behaviors of the entities (micro-level) produce an understanding of the overall outcome at the system-level (macro-level). In both cases (MASs as software applications and MASs as models for the analysis of complex systems), simulation plays a crucial role which needs to be further investigated.

I. INTRODUCTION

This is the fourth edition of MAS&S. The first edition was jointly held with EUROSIS ISC 2006 (Industrial Simulation Conference), June 5-7, 2006, Palermo, Italy [1]. The second edition happened in EUROSIS ESM 2007 (European Simulation and Modelling Conference), October 22-24, 2007, St. Julian's, Malta [2]. The third edition took place as part of MALLOW, the second edition of Multi-Agent Logics, Lan- guages, and Organisations (Federated Workshops), 7-11 September Torino, Italy.

The best papers of the first edition have also been selected and their extended and revised version published in International Journal of Agent Oriented Software Engineering [3]. Similarly, best papers from second to third editions were selected and extended for a special issue of the Simulation Modelling Practice and Theory Journal, which is in press.

MAS&S was conceived for stimulating discussion among researchers and practitioners working on ABS and AOSE, to enable the identification and the definition of methodologies and techniques for integrating them.

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August 3, 2010
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III. LIST OF PAPERS

- The Impact of Market Preferences on the Evolution of Market Price and Product Quality
  by *Hongliang Liu, Enda Howley, and Jim Duggan*

- Learning Virtual Agents for Decision-Making in Business Simulators
  by *Javier Garcia, Fernando Borrajo, and Fernando Fernandez*
- Looking for the Self-fulfilling Prophecy Effect in a Double Auction Artificial Stock Market
  by *Albert Meco, Javier Arroyo, Juan Pavón, and Javier Pajares*
- BDI Agents with Fuzzy Perception for Simulating Decision Making in Environments with Imperfect Information
  by *Giovani Farias, Graçaliz Dimuro, and Antonio Carlos Costa*
- When Will I See you Again: Modelling the Influence of Social Networks on Social Activities
  by *Nicole Ronald, Virginia Dignum, and Catholijn Jonker*
- Human Behaviours Simulation in Ubiquitous Computing Environments
  by *Teresa García-Valverde, Francisco Campuzano, Emilio Serrano, and Juan A. Botía*
- A Survey on Coordination Methodologies for Simulated Robotic Soccer Teams
  by *Fernando Almeida, Nuno Lau, and Luis Paulo Reis*
- ELDAMeth: A Methodology for Simulation-based Prototyping of Distributed Agent Systems
  by *Giancarlo Fortino and Wilma Russo*
- Design and Simulation of a Wave-like Self-Organization Strategy for Resource-Flow Systems
  by *Jan Sudeikat, Jan-Philipp Steghöfer, Hella Seebach, Wolfgang Reif, Wolfgang Renz, Thomas Preisler, and Peter Salchow*
- Generating Inspiration for Multi-Agent Simulation Design by Q-Learning
  by *Robert Junges and Franziska Klügl*

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V. ACKNOWLEDGMENT

REFERENCES

[1] Alessandro Genco, Antonio Gentile and Salvatore Sorce, editors. *Proceedings of the Industrial Simulation Conference (ISC 2006)*, June 5-7, 2006, University of Palermo, Palermo, Italy, 535 pages, ISBN 90-77381-26-0.
[2] Jaroslav Sklenar, Cyrille Bertelle and Giancarlo Fortino. *Proceedings of the European Simulation and Modeling Conference (ESM 2007)*, October 22-24, 2007, University of Malta, St Julians, Malta, 615 pages, ISBN 978-90-77381-36-6.
[3] Massimo Cossentino, Professor Giancarlo Fortino and Professor Wilma Russo. *Special Issue on Multi-Agent Systems and Simulation*, International Journal of Agent-Oriented Software Engineering (IJAOSE), 2(2), 2008, ISSN 1746-1383.