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Series Editors

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Agent-Mediated Electronic Commerce

Designing Trading Strategies and Mechanisms for Electronic Markets

AMEC 2010, Toronto, ON, Canada, May 10, 2010
and TADA 2010, Cambridge, MA, USA, June 7, 2010
Revised Selected Papers

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Preface

Enabled by the increasing processing power of computers and the pervasive interconnectivity of the Internet, automatic trading has become a ubiquitous feature of modern marketplaces. Investors use intelligent algorithms to trade stocks and currencies in global markets, businesses participate in complex automated supply chains, and advertisers bid dynamically for the attention of individual Web users. The benefits of using autonomous software components, or agents, in these settings are manifold. Unlike their human counterparts, trading agents are able to react almost instantaneously to changing circumstances, quickly process and fuse digital data from many diverse sources, and potentially complete millions of transactions per second.

However, our growing reliance on automated trading agents raises many pressing research challenges. At the level of the individual agent, we need to design effective decision-making algorithms that achieve their owners' objectives. This may entail the computational and economic challenges of building and learning accurate models of the market, of customers, and of other agents participating in the market. At a higher system level, we also need to ensure that markets meet their respective design objectives, whether this is achieving stability, maximizing allocative efficiency, or generating a profit for the market owner. Furthermore, as markets rarely exist in isolation, we need to understand how multiple competing or complementary markets interact with each other.

The science underpinning the design of trading strategies and mechanisms for electronic markets is a dynamic and exciting field, drawing on diverse disciplines ranging from computer science, operations research and management science, to economics and game theory. This is evidenced by the papers collected in this volume, which are revised and extended versions of work that appeared at two leading international workshops on electronic markets held in 2010. The first of these is the ACM EC Workshop on Trading Agent Design and Analysis (TADA 2010), co-located with the EC 2010 conference held at Harvard University, Cambridge, USA, and the second is the 12th International Workshop on Agent-Mediated Electronic Commerce (AMEC 2010), co-located with the AAMAS 2010 conference held in Toronto, Canada. Both workshops aim to present a cross-section of the state of the art in automated electronic markets, and encourage theoretical and empirical work that deals with both the individual agent level as well as the system level. As such, the following papers consider exciting emerging topics, such as ad auctions and supply chains, and they present novel algorithms and rigorous theoretical results for new market mechanisms and trading strategies. They also examine the interactions between competing markets, describe how new markets can be designed automatically, and several of the papers evaluate their results using real data from large e-commerce sites or from experiments with human traders.

We hope that the papers presented in this volume offer readers a comprehensive and informative snapshot of the current state of the art in a stimulating and timely area of research. We would also like to express our gratitude to those that have made this collection possible. This includes the paper authors, who presented their work at the original workshops and subsequently revised their manuscripts, the members of the Program Committees of both workshops, who reviewed the work to ensure a consistently high quality, as well as the workshop participants, who contributed to lively discussions and whose suggestions and comments were incorporated into the final papers presented here.

August 2012

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