Book Announcement: *Autonomous Bidding Agents*

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We announce our book, *Autonomous Bidding Agents: Strategies and Lessons from the Trading Agent Competition*, published in 2007 by MIT Press. Our announcement draws on the preface of said book.

Autonomous Bidding Agents distills the experiences and lessons learned from the international Trading Agent Competition (TAC) series. Motivated by TAC, a community of academic and industry researchers has been inventing and polishing techniques for autonomous bidding by software agents. We, the authors, have been both organizers of TAC and successful participants. As such, we have tackled the problems posed by TAC with our own independent efforts, and we have closely observed the evolution of approaches developed by the community as a whole.

TAC is a stylized setting exemplary of the rapidly advancing domain of electronic marketplaces. It is also a benchmark, motivating researchers to apply innovative approaches to a common task. A key feature of TAC is that it provides an academic forum for open comparison of agent bidding strategies in a complex scenario, as opposed to, for example, automated trading in real-world securities markets, in which practitioners are less inclined to share their technologies. As the product of sustained focus and cross-fertilization of ideas over time, TAC provides a unique case study of the current capabilities and limitations of autonomous bidding agents.

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Throughout the text, we balance the contextual reporting of results from the specific TAC scenario with the desire to generalize to the broader problem of autonomous bidding. To ground the discussion, we include substantial data from controlled TAC experiments and TAC tournaments, methods employed by particular TAC agents, and anecdotes from TAC events. To generalize these lessons and techniques, we develop a generic trading agent architecture unifying the approaches observed, define abstract versions of trading agent subproblems, and highlight important properties of these problems and proposed solutions through theoretical and experimental analysis.

We consider this dual approach—intensive design focused on a concrete scenario, interleaved with abstraction and analysis aimed at drawing general lessons— essential for deriving principled trading agent designs. Real-world markets are too complex to rely solely on abstract modeling. By testing general ideas in particular scenarios, we are forced to work through operational details that tend not to arise in more abstract models. Through careful evaluation of proposed designs, we can achieve some confidence in their viability, and gather evidence about their limitations. To ensure that solutions are not excessively driven by idiosyncrasies of the specific market scenarios, we must then lift the methods back up to more generic market settings. Through this process we demonstrate how to adapt the techniques to similar environments, and even transfer methods across qualitatively different market domains.

The main contributions of this book are (i) the story of the development and evolution of the TAC research initiative, including anecdotal accounts of TAC agent interactions over the years; (ii) detailed analyses of specific TAC agent designs and bidding techniques; and (iii) development of some general engineering foundations for trading agent design. Our intended audience includes individuals interested in constructing TAC agents, but we expect most readers are primarily motivated by other trading domains. The immersive TAC experience provided by this book follows the path we have taken ourselves in developing our understanding of the current best practices for designing autonomous bidding agents.