

Victor Naroditskiy
Department of Computer Science
Brown University, Box 1910
Providence, RI 02912-1910
victor@brown.edu
1-401-447-5910
<http://www.cs.brown.edu/~vnarodit/>

RESEARCH INTERESTS

Computational Game Theory, Sponsored Search Auctions, Trading Agents, Combinatorial Optimization

EDUCATION

Brown University, Providence, RI
Ph.D. Candidate in Computer Science, May 2009 (expected)
Sc. M. Computer Science, May 2005
Master's Thesis: Building a successful TAC SCM Agent. Stochastic Scheduling Problem.
Advisor: Dr. Amy Greenwald.

Bryant University, Smithfield, RI
B.S. Computer Information Systems, Finance, May 2002

RESEARCH EXPERIENCE

Research Assistant, Brown University June 2003-present

Current projects

- Designing an iterative procedure for finding symmetric pure strategy Bayes-Nash equilibria in auctions with discrete bids.
- Designing a truthful allocation mechanism that keeps the most surplus among the agents.

Past projects

- Theoretically and experimentally analyzed the strategy of bidding marginal values in simultaneous auctions for interdependent goods
- Headed Brown University's research team that took part in the Trading Agent Competition in Supply Chain Management in 2004 and 2005 and developed a key component of the agent that took the 5th place in the final round of TAC 2006.
- Developed a simulator for testing bidding heuristics used in the Travel Division of the Trading Agent Competition and analyzed performance of the heuristics.
- Used the Sample Average Approximation (SAA) method to solve a stochastic scheduling problem. Investigated the strategy of solving multiple SAA instances (corresponding to different samples) and evaluating the resulting solutions to choose the best one.

Teaching Assistant, Brown University

- Probabilistic Methods in Computer Science Fall 2006
 - Introduction to Combinatorial Optimization Fall 2007
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Research Intern *HP, Palo Alto, CA* June 2007-August 2007
Supervisor – Yunhong Zhou

- Worked on the sponsored search bidding problem from the point of view of an advertiser who needs to distribute a limited budget across different keywords in order to maximize profit from resulting sales.
- Modeled the bidding problem as an online multiple-choice knapsack problem and designed an algorithm for solving online multiple-choice knapsack based on an algorithm for online knapsack.

RELATED COURSES

Computer Science: Game-Theoretic Artificial Intelligence, Probabilistic Methods in Computer Science, Advanced Probabilistic Methods in Computer Science, Computational Cognitive Science, Stochastic Optimization, Introduction to Combinatorial Optimization, Hard Problems in Combinatorial Optimization

Economics: Game Theory; Risk, Uncertainty, and Information

PEER-REVIEWED CONFERENCE, JOURNAL, AND WORKSHOP PAPERS

Naroditskiy, V., Greenwald A. **Using Iterated Best-Response to Find Bayes-Nash Equilibria in Auctions.** *In Proceedings of AAAI 2007*, pp. 1894-1895.

Odean, T., Naroditskiy, V., Greenwald, A., and Donaldson, J. **Marginal Bidding: An Application of the Equimarginal Principle to Bidding in TAC SCM.** *In Proceedings of the Trading Agent Design and Analysis Workshop at AAAI 2007.* pp. 27-35.

Lee, S., Greenwald, A., and Naroditskiy, V. **RoxyBot-06: An SAA² TAC Travel Agent.** *In Proceedings of the Twentieth International Joint Conference on Artificial Intelligence (Jan 2007)*

Greenwald, A., Lee, S., and Naroditskiy, V. **Heuristics for the Deterministic Bidding Problem.** *SIGecom Exchanges 6*, 1 (2006), 35-44.

Greenwald A., Guillemette B., Naroditskiy V., and Tschantz M. **Scaling Up the Sample Average Approximation Method for Stochastic Optimization with Applications to Trading Agents.** *In Edited volume of the AMEC and TADA 2005 workshops*, H. L. Poutre, N. Sadeh, and S. Janson, Eds. Springer Verlag, 2006

Benisch, M., Greenwald, A., Grypari, I., Lederman, R., Naroditskiy, V., and Tschantz, M. **Botticelli: A Supply Chain Management Agent.** *In Proceedings of the Third International Conference on Autonomous Agents and Multiagent Systems (Jul 2004)*, pp. 1174-1181.

Benisch, M., Greenwald, A., Grypari, I., Lederman, R., Naroditskiy, V., and Tschantz, M. **Botticelli: A Supply Chain Management Agent Designed to Optimize under Uncertainty.** *SIGecom Exchanges (Newsletter of the ACM Special Interest Group on Ecommerce) 4*, 3 (2004), 29-37.

Benisch, M., Greenwald, A., Naroditskiy, V., and Tschantz, M. **A Stochastic Programming Approach to Scheduling in TAC SCM.** *In Proceedings of the Fifth ACM Conference on Electronic Commerce (May 2004)*, pp. 152-160.

PRESENTATIONS

AAMAS 04, TADA Workshop at IJCAI 05, INFORMS Annual Meeting 06, TADA Workshop at AAAI 07, Student Poster at AAAI 07.

PROFESSIONAL EXPERIENCE

Web Programmer

Conference Exchange, Cumberland, RI

Sept 2000 –
June 2003

- Maintained and enhanced online abstract submission systems for scientific associations using Perl, HTML, JavaScript, and MySQL. Responsibilities included a wide range of tasks from fixing bugs to developing new web applications
 - Developed an online timecard system.
 - Developed an application for automatic generation of meeting registration forms.
 - Used Perl regular expressions to import questions, answers, and solutions from exam books in Word format to a database.
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RELEVANT COMPUTER SKILLS

Java, Perl, Matlab, HTML, Latex2e, Cplex
Familiarity with C++, C
