

# Kate Larson

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Carnegie Mellon University  
Computer Science Department  
5000 Forbes Ave,  
Pittsburgh PA 15213  
(412) 268 3882  
klarson@cs.cmu.edu  
<http://www.cs.cmu.edu/~klarson>

Citizenship: Canadian  
Visa Status: F1

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## Research Interests

Artificial Intelligence, Multiagent Systems, Ecommerce, Game Theory, Automated Negotiation, Coalition Formation, Models of Bounded Rationality, Resource Bounded Reasoning

## Education

Degree	Institution	Date	Field
PhD	Carnegie Mellon University, Pittsburgh, PA <i>Mechanism Design for Computationally Bounded Agents</i> Advisor: Professor Tuomas Sandholm Committee: Tuomas Sandholm (CMU), Avrim Blum (CMU), Andrew Moore (CMU), Craig Boutilier (U. of Toronto), Mark Satterthwaite (Northwestern U.)	Summer 2004 (expected)	Computer Science
M.S.	Washington University, St. Louis, MO Computer Science Department	December 1999	Computer Science
B.S. (Hons)	Memorial University, St. John's, Canada Department of Mathematics and Statistics	May 1997	Mathematics

## Honors

University Medal for Academic Excellence in Mathematics, Memorial University of Newfoundland, 1997.

Natural Science and Engineering Research Council (NSERC) Postgraduate Award A, 1997.  
(Declined since I decided to accept an offer to do graduate studies in the US).

Atlantic Accord Career Development Award, 1995, 1996.

Memorial University of Newfoundland Endowment Fund Scholarship, 1996.

Faculty of Science Dean's List, Memorial University of Newfoundland, 1993, 1994, 1995, 1996.

Natural Science and Engineering Research Council (NSERC) Undergraduate Research Award, 1994.

## **Other Awards**

Student Scholarship, AAAI 1998, AAAI 2000, AAAI 2002

Student Scholarship, AAMAS 2002

## **Research Experience**

2001-present: Graduate Research (Advisor: Prof. T. Sandholm)  
Department of Computer Science, Carnegie Mellon University, Pittsburgh, PA.

1997–2001: Graduate Research (Advisor: Prof. T. Sandholm)  
Department of Computer Science, Washington University, St. Louis, MO.

Summer 1996, Summer 1997: Research Assistant,  
Defence Research Establishment Atlantic, Dartmouth, Canada.  
Developed computer models to analyze designs of underwater acoustic transducers.

Summer 1995: Research Assistant  
Math Learning Centre at Memorial University of Newfoundland.  
Studied the role of automaticity in learning. Involved in software development (Mathdrill).

Summer 1994: Natural Science and Engineering Research Council Undergraduate Research Award.  
Math Learning Centre at Memorial University of Newfoundland.  
Studied the role of automaticity in learning. Involved in software development (Mathdrill).

## **Publications**

### **Journals and Highly Refereed Conferences**

K. Larson and T. Sandholm, 2004, Experiments on deliberation equilibria in auctions, To appear in the *Third International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS-2004)*, July 2004.

K. Larson and T. Sandholm, 2004, Using performance profile trees to improve deliberation control, To appear in the *Nineteenth National Conference on Artificial Intelligence (AAAI 2004)*, July 2004.

K. Larson and T. Sandholm, 2004, Strategic deliberation control and truthful revelation: An impossibility result, To appear in *ACM Conference on Electronic Commerce* (short paper), June 2004.

- K. Larson and T. Sandholm, 2003, Miscomputing Ratio: The social cost of selfish computing, *Second International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS 2003)*, pp. 273-280, Melbourne, Australia, July 2003.
- K. Larson and T. Sandholm, 2002, An alternating offers bargaining model for computationally limited agents, *First International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2002)*, pp. 135-142, Bologna, Italy, July 2002.
- K. Larson and T. Sandholm, 2001, Bargaining with limited computation: Deliberation equilibrium, *Artificial Intelligence*, 132(2), pp.183-217.

A short early version appeared as

K. Larson and T. Sandholm, 2000, Deliberation in equilibrium: Bargaining in computationally complex problems. *Proceedings of the Seventeenth National Conference on Artificial Intelligence (AAAI)*, pp. 48-55, Austin, TX.

- K. Larson and T. Sandholm, 2001, Costly valuation computation in auctions, *Eighth Conference on Theoretical Aspects of Rationality and Knowledge (TARK 2001)*, pp. 169-182, Siena, Italy, July 2001.
- K. Larson, and T. Sandholm, 2000, Anytime coalition structure generation: An average case study. *Journal of Experimental and Theoretical Artificial Intelligence*, (12), 23–42.

A short early version appeared as

K. Larson and T. Sandholm, 1999, Anytime Coalition Structure Generation: An Average Case Study, *Third International Conference on Autonomous Agents (AGENTS)*, pp. 40-47, Seattle, WA.

- T. Sandholm, K. Larson, M. Andersson, O. Shehory, and F. Tohme, 1999. Anytime coalition structure generation with worst case guarantees. *Artificial Intelligence*. (111)1–2, 209–238.

A short early version appeared as

T. Sandholm, K. Larson, M. Andersson, O. Shehory, and F. Tohme, 1998. Anytime coalition structure generation with worst case guarantees. *Proceedings of the Fifteenth National Conference on Artificial Intelligence (AAAI)*, pp 46–53, Madison, WI.

## **Refereed Workshops and Posters**

- K. Larson and T. Sandholm, 2002, Miscomputing Ratio: The social cost of selfish computing, *AAAI 2002 Workshop on Game Theoretic and Decision Theoretic Agents*, Edmonton, Canada.
- K. Larson and T. Sandholm, 2002, Bidders with hard valuation problems, Poster presentation at *First International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2002)*, Bologna, Italy.
- K. Larson and T. Sandholm, 2001, Computationally limited agents in auctions. *Workshop on Agent-based Approaches to B2B, Autonomous Agents 2001*, Montreal, Canada.

## **Papers About to be Submitted**

K. Larson and T. Sandholm, Bidders with hard valuation problems.

## **Invited Talks**

*Strategic Information Acquisition and Auctions*, Aladdin Workshop on Auction Theory and Practice, Carnegie Mellon University, November 7-8, 2003.

*Bidding Agents with Hard Valuation Problems*, Software agents for automated decision making, INFORMS 2003, Atlanta, GA.

*Equilibrium Strategies for Bidders with Hard Valuation Problems*. Dagstuhl Workshop on Electronic Market Design, Germany, June 2002.

*Equilibrium Strategies for Bidders with Hard Valuation Problems*. Stanford Institute for Theoretical Economics (SITE) Workshop on The Economics of the Internet. June, 2002, Stanford, CA.

## **Teaching**

CS 15-381: Artificial Intelligence: Representation and Problem Solving, Carnegie Mellon University, Fall 2002,

Teaching assistant for Prof. Tuomas Sandholm.

Responsibilities included preparing and grading assignments, creating exam questions, grading exams, and holding weekly office hours. I also set up and ran checker competitions through out the semester where students wrote programs that competed against each other.

CS 511: Artificial Intelligence, Washington University in St. Louis, Spring 2000,

Teaching assistant for Prof. Tuomas Sandholm.

Responsibilities included lecturing in some classes and organizing and grading assignments.

CS 511: Artificial Intelligence, Washington University in St. Louis, Spring 1999,

Teaching assistant for Prof. Tuomas Sandholm.

Responsibilities included organizing and grading assignments.

Math 2001: Introduction to Real Analysis, Memorial University of Newfoundland, Spring 1997.

Responsibilities included grading assignments.

## **Academic Service**

### **Program Committee:**

Third International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2004)

Workshop on Agent Mediated Electronic Commerce VI (AMEC-VI)

Workshop on Agent Mediated Electronic Commerce V (AMEC-V) at the AAMAS 2003 conference,

Second International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2003),

First International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2002).

### **Journal Reviewer:**

Artificial Intelligence,

Journal of Artificial Intelligence Research (JAIR),

Group Decision and Negotiation,

Journal of Autonomous Agents and Multiagent Systems (JAAMAS),

Decision Support Systems Journal,

ACM Transactions on Internet Technology.

### **Conference and Workshop Reviewer:**

Eighteenth International Joint Conference on Artificial Intelligence (IJCAI 2003),

Workshop on Security of Mobile Multiagent Systems (SEMAS 2002) at the AAMAS 2002 conference,

Workshop on Agent Mediated Electronic Commerce IV (AMEC-IV) held at the AAMAS 2002 conference,

Workshop on Coalition Formation in Dynamic Multiagent Environments 2002 held at AAAI 2002.

### **Departmental Service**

Maintained eMediator, an electronic commerce server.

Member of the graduate student advisory board for Women@SCS.

Helped in various capacities with events during the Computer Science Immigration Course and Open House.

### **Personal Information**

Citizenship: Canadian

Languages: English, French, basic German

Travel: I have both lived in a variety of places and travelled fairly extensively. I grew up on the island of Newfoundland, Canada but have lived in other regions of Canada (Ontario and Alberta), USA, England, Australia, and Papua New Guinea. I have also visited South Africa and traveled throughout Western Europe.

## References

Prof. Tuomas Sandholm  
Computer Science Department  
Carnegie Mellon University  
5000 Forbes Ave  
Pittsburgh, PA 15213  
+1 (412) 268 8216  
sandholm@cs.cmu.edu

Prof. Craig Boutilier  
Department of Computer Science  
University of Toronto  
6 King's College Road  
Toronto, Ontario, M5S 3H5  
Canada  
+1 (416) 946 5714  
cebly@cs.toronto.edu

Prof. Andrew Moore  
Computer Science Department  
Carnegie Mellon University  
Pittsburgh, PA 15213  
+1 (412) 268 7599  
awm@cs.cmu.edu

Prof. Mark Satterthwaite  
Department of Management and Strategy  
Kellogg School of Management  
Northwestern University  
Evanston, IL 60208  
+1 (847) 491 5482  
m-satterthwaite@northwestern.edu

Dr. Makoto Yokoo  
NTT Communication Science Laboratories  
2-4 Hikaridai, Seika-cho  
Soraku-gun, Kyoto 619-0237 Japan  
+81 774 93 5231  
yokoo@cslab.kecl.ntt.co.jp

Additional references available upon request.