

Curriculum Vitae

VICTOR R. LESSER

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Education

M.S. & Ph.D. in Computer Science, Stanford University, Stanford, California

Ph.D. conferred 1973¹ (attended 1966–1972)

Ph.D. Thesis: “Dynamic Control Structures and Their Use in Emulation,”
William F. Miller, Thesis Advisor.

A.B. in Mathematics, Cornell University, Ithaca, New York, 1966.

Current Employment

Distinguished Professor Emeritus, School of Computer Science, University of Massachusetts
(2011–)

Distinguished Professor, Department of Computer Science, University of Massachusetts (2009–
2011).

Professor, Department of Computer Science, University of Massachusetts (1982–2009).

Director, Multi-Agent Systems Laboratory, University of Massachusetts (1992– 2014).

Research Interests:

My general research area is how to architect complex AI systems that operate in open environments. This has led to work in the areas of blackboard systems, multi-agent systems/distributed AI, real-time AI and signal understanding. I have applied this to application areas such as sensor networks for vehicle tracking and weather monitoring, speech and sound understanding, information gathering on the internet, peer-to-peer information retrieval, intelligent user interfaces, distributed task allocation and scheduling, and virtual agent enterprises.

¹ Completed all degree requirements, including submission of completed thesis, in August 1972

Previous Employment and Affiliations

Visiting Professor, Delft University of Technology, Delft, Netherlands (September – November, 2013).
Distinguished Visiting Scholar, University of Technology Sydney, Australia (March 2013-April 2013).
Visiting Researcher, School of Electronics and Computer Science, Southampton University, Southampton, England, January 24 – March 12, 2005 (on sabbatical during the Spring 2005 semester).
Visiting Scholar, Knowledge Systems Laboratory, Stanford University (on sabbatical during 1990-91 academic year).
Visiting Scientist at MIT Artificial Intelligence Laboratory (on sabbatical during 1983).
Associate Professor in Computer and Information Science Department, University of Massachusetts (1978-1982).
Assistant Professor in Computer and Information Science Department, University of Massachusetts (1977-1978).
Research Computer Scientist (under the guidance of Professor Raj Reddy), Computer Science Department, Carnegie-Mellon University (1974-1977).
Research Associate (under the guidance of Professor Raj Reddy), Computer Science Department, Carnegie-Mellon University (1972-1973).
Research Assistant (under the guidance of Professor William Miller), Stanford Linear Accelerator Center, Computation Group: September 1967 to September 1972.
Summer Employee, IBM T.J. Watson Research Center, Yorktown Heights, New York: June to August 1969.
Visitor, Mathematical Laboratory, Cambridge University, Cambridge, England: June to August 1968.
Research Assistant (under the guidance of Professor Raj Reddy), Stanford University, Artificial Intelligence Project, Stanford, California: June to September 1967.
Analyst, Control Data Corporation, Palo Alto, California: June to September 1966.
Senior Research Assistant (under the guidance of Professor Leo Tick), New York University Data Processing Laboratory, Bronx, New York: June to September 1964 and June to September 1965.
Assistant Programmer, Control Data Corporation, Palo Alto, California: June 1963 to September 1963.
Systems Programmer (part-time), Cornell University Computer Center, Ithaca, New York: September 1962 to June 1966.
Programmer (under the guidance of Professor Leo Tick), New York State Health Department in conjunction with New York University's Data Processing Laboratory, Bronx, New York: June 1962 to September 1962.

Honors and Awards

Visiting Professorship in the Netherlands, awarded by Royal Netherlands Academy of Arts and Sciences (one year, commencing February 2013).
Honored in 2011 with The Victor Lesser Graduate Scholarship in Artificial Intelligence: an endowed scholarship to be awarded annually to a talented student specializing in Artificial Intelligence in the University of Massachusetts Computer Science Ph.D. program.
Recipient of the IJCAI-09 Award for Research Excellence.
Fellow of the IEEE (Elected January 2009).
Recipient of Chancellor's Award for Outstanding Accomplishments in Research and Creative Activity, University of Massachusetts Amherst, 2008.
Recipient of Award for Outstanding Research, College of Natural Sciences & Mathematics, University of Massachusetts Amherst, 2008.
Joint winner of IFAAMAS Influential Paper Award, 2008. Received for journal article co-authored with Edmund Durfee: "Partial Global Planning: A Coordination Framework for Distributed Hypothesis Formation." In *IEEE Transactions on Systems, Man, and Cybernetics*, 21(5): 1167–1183, 1991.

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IFAAMAS (International Foundation of Autonomous Agents and Multi-Agent Systems) established the “*Victor Lesser Distinguished Dissertation Award*” (2007).

Co-authored paper that was nominated for Best Paper Award (one of eight finalists out of 531 papers submitted) at Sixth International Joint Conference on Autonomous Agents and Multi-Agent Systems, Honolulu, May 2007.

Recipient of a Special Recognition Award for foundational research in generalized coordination technologies from the Information Processing Technology Office at DARPA, May 2006.

Co-recipient (with R. Becker and S. Zilberstein) of Best Paper Award at *IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT 2005)*, held in Compiègne, France, September 2005, for paper titled: “Analyzing Myopic Approaches for Multi-Agent Communication.”

Recipient of Award for Outstanding Teacher, College of Natural Sciences & Mathematics, University of Massachusetts Amherst, 2003-2004.

Two papers in the IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT 2004) were among the six finalists for Best Paper Award.

Co-recipient (with R. Becker, S. Zilberstein, and C. Goldman) of Best Paper Award at the Second International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS), held in Melbourne, Australia, July 2003, for paper titled “Transition-Independent Decentralized Markov Decision Processes.”

Co-recipient (with R. Vincent, B. Horling, and T. Wagner) of Honorable Mention in FIPA Software Prototypes Track Demonstration Competition at the Fifth International Conference on Autonomous Agents, held in Montreal, Canada, 2001, for paper titled: “Implementing Soft Real-Time Agent Control.”

Co-recipient (with Ping Xuan) of Best Student Paper Award at Sixth International Workshop on Agent Theories, Architectures, and Languages (ATAL), 1999, for paper titled: “Incorporating Uncertainty in Agent Commitments.”

Founding Fellow of American Association of Artificial Intelligence (Elected 1990).

Co-recipient (with K. Kuwabara) of NTT Communication and Information Processing Laboratory’s Technical Paper of the Year Award for “Extended Protocol for Multistage Negotiation,” 1989.

Finalist in Outstanding Paper Award Competition, First International Conference of Distributed Processing, Huntsville, Alabama, 1979.

NATO Fellowship for Summer Institute in Microprogramming, September 1971.

National Science Foundation Graduate Fellow in Computer Science, September 1966 to September 1970.

New York State Regent’s Scholarship, September 1962 to June 1966.

Tutorials and Distinguished Lectures

“Personal Reflections on Self-Awareness and Adaptability in Agent and Multiagent Systems.” Keynote talk, IEEE/WIC/ACM International Conference on Intelligent Agent Technology, Atlanta GA, November 2013.

“Practical Application of Multi-Agent Systems: The CASA Severe Weather Radar Detection and Tracking System.” Distinguished Lecture, Triangle Computer Science Distinguished Lecturer Series, North Carolina State University, November 2011.

“Agents and Multiagent Systems and Their Application to Distributed Sensor Networks.” One-day tutorial; Summer School on Distributed and Embedded Systems and Networks, University of Cape Coast, Ghana, January 2007.

“Coordination in Multiagent Systems.” One-day tutorial; Brazil Agents School, Porto Alegre, September 2005.

“Scaling Up Multi-Agent Systems Through Organizational Structuring.” Invited Speaker, 2004 IEEE/WIC/ACM International Conference on Intelligent Agent Technology, Beijing, China, September 2004.

“Multi-Agent Coordination Through the Lens of Decentralized Markov Decision Processes.” Keynote Speaker, *The 17th International Conference on Industrial & Engineering Applications of Artificial Intelligence & Expert Systems (IEA/AIE 2004)*, Ottawa, Canada, May 2004.

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- “Understanding Multi-Agent Coordination Through Decentralized Markov Decision Processes (DEC-MDPS).” Keynote Speaker, First Cuban Symposium on Artificial Intelligence/10th International Conference on Informatica 2004, Havana, Cuba, May 2004.
- “Current Research Focus of the Multi-Agent Systems Laboratory at the University of Massachusetts at Amherst.” Invited Speaker, Havana University, Havana, Cuba, May 2004.
- “Scaling up Multi-Agent Systems through Organizational Structuring.” Distinguished Lecture, Washington University School of Engineering and Applied Science Distinguished Seminar Series, St. Louis, MO, February 2004.
- “Experiences Building a Distributed Sensor Network.” Plenary Speaker, AI’2003: The Sixteenth Canadian Conference on Artificial Intelligence, Halifax, Nova Scotia, June 2003.
- “Evolution of the GPGP/TAEMS Domain-Independent Coordination Framework.” Plenary Speaker, The First International Joint Conference on Autonomous Agents & Multi-Agent Systems (AAMAS 2002), Palazzo Re Enzo, Bologna, Italy, July 2002.
- “An Academic Career in the 21st Century – Part 1: Getting and Holding a Job; Part 2: How to Structure a Successful Research Career.” Tutorial at North American Agents School 2002, USC, January 2002.
- “A Personal Odyssey in the World of Multi-Agent Systems.” Keynote address at AgentLink Summer School, Utrecht, Netherlands, July 1999.
- “Multi-Agent Systems.” Two-day tutorial; National Defense Academy, Yokosuka, Japan, December 1996.
- “Distributed Problem Solving.” Two-day tutorial; *Advanced Course on AI (ACAI-91)*, Bilbao, Spain, July 1991.
- “Successful AI Applications.” Distinguished Lecture; Bilbao, Spain, July 1991.
- “Retrospective View on FA/C Distributed Problem Solving.” UCLA Computer Science Department, Distinguished Lecture Series, December 1990.
- “Distributed AI and Blackboard Systems.” One-day tutorial; Trinity College/Hartford Graduate Center, one-day seminar: May 1990.
- “Blackboard-based AI Systems.” Three-day tutorials; Digital Equipment Corporation, Marlborough, Massachusetts, February 27–March 1, 1989 and March 14–16, 1990.
- “Scheduling Using Blackboard-based AI Systems.” Three-day tutorial; Digital Equipment Corporation, Valbonne, France, June 1988.
- “Cooperative Distributed Problem Solving.” Tutorial; The Second International Conference on Expert Database Systems, Tysons Corner, Virginia, April 1988.
- “Distributed Expert Systems.” Distinguished lecture; General Electric’s Whitney Symposia on Science and Technology, Rensselaerville, New York, June 1987.
- “Control in Complex Knowledge-Based Systems.” Tutorial; IEEE Computer Society AI Conference, 1984.
- “Distributed Problem Solving.” Two-day tutorial; Istituto di Scienze Dell’ Informazione, Università di Pisa, Pisa, Italy, 1982.
- “Current Trends in Microprocessors and Multiprocessors.” Six-day tutorial; Japanese Electronic Industrial Development Association (JEIDA) Annual Lecture Series. Tokyo, October 1973.
- “Dynamic Control Structures and Their Use in Emulation.” Aarhus University Summer Lecture Series on Multiprocessor and Microprocessor Research, Aarhus, Denmark, July 1971. Lecture series on my Ph.D. thesis research over a two-week period.

Major Research Administrative Responsibilities

Editorial Boards:

Associate Editor: *Journal of Autonomous Agents and Multi-Agent Systems* (1997–2014wsz).

Regional Editor: *International Journal on Cooperative Information Systems* (IJCIS) (1991–2011).

On Editorial Board for *Group Decision and Negotiation* (1991– 2011).

On Editorial Board for *Multiagent Systems, Artificial Societies, and Simulated Organizations* (book series), Kluwer Academic Publishers (2000– 2006).

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On Editorial Board for *Artificial Intelligence Review* (1995– 2006).

On Editorial Board for *IEEE Expert* (1994-1997).

On Editorial Board for *Real-Time Systems* (1989–1996).

On Editorial Board of *AI for Engineering Design, Analysis and Manufacturing* (1986–1992).

Guest Editor, *Real-Time Systems Journal*—Special Issue on AI (1990).

Senior Administrative Positions

Board of Directors, International Foundation for Autonomous Agents and Multi-Agent Systems (1998-2010).²

Past President, International Foundation for Multi-Agent Systems (2002-2004).

Founding President, International Foundation for Multi-Agent Systems (1998-2002).

Chairman of Advisory Board, 2nd International Conference on Multi-Agent Systems (Dec. 1996).

General Chairman, 1st International Conference on Multi-Agent Systems (June 1995).

General Chairman, Workshop on Distributed Artificial Intelligence (1984).

Chairman of Naval Research Lab’s AI Center Review Panel (1984).

PUBLICATIONS

Journals

1. An, Bo; Gatti, Nicola; Lesser, Victor (2013). “Bilateral Bargaining with One-Sided Uncertain Reserve Prices.” *Autonomous Agents and Multi-Agent Systems*, Springer, 26 (3): 420–455.
2. Cheng, Shanjun; Raja, Anita; and Lesser Victor (2013). “Multiagent Meta-level Control for Radar Coordination.” *Web Intelligence and Agent Systems: An International Journal*, IOS Press, Netherlands, Vol. 11, No.2: pp. 81–105.
3. Yu, Han; Shen, Zhiqi; Leung, Cyril; Miao, Chunyan; Lesser, Victor (2013). “A Survey of Multi-Agent Trust Management Systems.” *IEEE Access*, 01/2013; 1(1): 35-50.
4. Zhang, Xiaoqin (Shelley); and Lesser, Victor (2013). “Meta-Level Coordination for Solving Distributed Negotiation Chains in Semi-Cooperative Multi-Agent Systems.” *Group Decision and Negotiation*, Springer Netherlands, Vol. 22, Issue 4, pp. 681–713.
5. Zhang, Xiaoqin (Shelley); Yoon, S.; DiBona, P.; Appling, D.S.; Ding, L.; Doppa, J.R.; Greeny, D.; Guo, J.K.; Kuter, U.; Levine, G.; MacTavish, R.L.; McFarlane, D.; Michaelis, J.R.; Mostafa, Hala; Ontañón, S.; Parker, C.; Radhakrishnan, J.; Rebguns, A.; Shrestha, B.; Song, Z.; Trewhitt, E.B.; Zafar, Huzaifa; Zhang, Chongjie; Corkill, Daniel; DeJong, G.; Dietterich, T.G.; Kambhampati, S.; Lesser, Victor; et al. (2012). “An Ensemble Architecture for Learning Complex Problem-Solving Techniques from Demonstration.” *ACM Transactions on Intelligent Systems and Technology*, ACM: New York, Vol. 3, No. 4, Article 75: 38 pages.
6. An, Bo; Lesser, Victor; Sim, Kwang Mong (2011). “Strategic Agents for Multi-Resource Negotiation.” *Autonomous Agents and Multi-Agent Systems*. Springer Netherlands. Vol. 23 (1): 114–153.
7. An, Bo; Lesser, Victor (2010). “Characterizing Contract-based Multi-agent Resource Allocation in Networks.” *IEEE Transactions on Systems, Man and Cybernetics: Part B*, Vol. 40 (3): 575–586.
8. Becker, Raphen; Carlin, Alan; Lesser, Victor; Zilberstein, Shlomo (2009). “Analyzing Myopic Approaches for Multi-Agent Communication.” *Computational Intelligence*, Blackwell Publishers, Vol. 25 (1): 31–50.
9. Abdallah, Sherief; Lesser, Victor (2008). “A Multiagent Reinforcement Learning Algorithm with Non-linear Dynamics.” *Journal of Artificial Intelligence Research*, Vol. 33, pp. 521–549.
10. Horling, Bryan; Lesser, Victor (2008). “Using Quantitative Models to Search for Appropriate Organizational Designs.” *Autonomous Agents and Multi-Agent Systems*. Springer-Netherlands, Vol. 16 (2): 95–149.

² IFAAMAS modified in 2006 from *International Foundation for Multi-Agent Systems (IFMAS)*.

11. Sims, Mark; Corkill, Daniel; Lesser, Victor (2008). "Automated Organization Design for Multi-agent Systems." *Autonomous Agents and Multi-Agent Systems*. Springer-Netherlands, Vol. 16 (2): 151–185.
12. Raja, Anita; Lesser, Victor (2007). "A Framework for Meta-level Control in Multi-Agent Systems." *Autonomous Agents and Multi-Agent Systems*, Springer, Vol. 15 (2): pp. 147–196.
13. Horling, Bryan; Lesser, Victor; Vincent, Regis; Wagner, Thomas (2006). "The Soft Real-Time Agent Control Architecture." *Autonomous Agents and Multi-Agent Systems*, Springer, Vol. 12 (1): 35–91.
14. Mailler, Roger; Lesser, Victor (2006). "A Cooperative Mediation-Based Protocol for Dynamic, Distributed Resource Allocation." *IEEE Transactions on Systems, Man, and Cybernetics*, Part C: Applications and Reviews — Special Issue on Game-theoretic Analysis and Stochastic Simulation of Negotiation Agents. IEEE Press. Vol. 36 (1): 80–91.
15. Mailler, Roger; and Lesser, Victor (2006). "Asynchronous Partial Overlay: A New Algorithm for Solving Distributed Constraint Satisfaction Problems." *Journal of Artificial Intelligence*, Vol. 25, pp. 529–576.
16. Wagner, Thomas; Raja, Anita; and Lesser, Victor (2006). "Modeling Uncertainty and Its Implications to Sophisticated Control in TÆMS Agents." *Autonomous Agents and Multi-Agent Systems*. Vol. 13 (3): 235–292.
17. Zhang, Haizheng; Lesser, Victor (2006). "Forming and Searching Content-Based Hierarchical Agent Clusters in Distributed Information Retrieval Systems." *Web Intelligence and Agent Systems*, IOS Press, Vol. 4 (4), pp. 353–370.
18. Zhang, XQ; Lesser, V.; Wagner, T. (2006). "Integrative Negotiation Among Agents Situated in Organizations." *IEEE Transactions on Systems, Man, and Cybernetics*, Part C: Applications and Reviews — Special Issue on Game-theoretic Analysis and Stochastic Simulation of Negotiation Agents. IEEE Press. Vol. 36 (1): 19–30.
19. Horling, Bryan; and Lesser, Victor (2005). "Analyzing, Modeling and Predicting Organizational Effects in a Distributed Sensor Network." *Journal of Brazilian Computer Science*—Special Issue on Agent Organizations. Vol. 11 (1): 9–30.
20. Zhang, XQ; Lesser, V.; Podorozhny, R. (2005). "Multi-Dimensional, MultiStep Negotiation for Task Allocation in a Cooperative System." *Autonomous Agents and Multi-Agent Systems*, Vol. 10 (1): 5–40.
21. Zhang, XQ; Lesser, Victor; Abdallah, Sherief (2005). "Efficient Management of Multi-Linked Negotiation Based on a Formalized Model." *Autonomous Agents and Multi-Agent Systems*, Vol. 10 (2): 165–205.
22. Becker, Raphen; Zilberstein, Shlomo; Lesser, Victor; Goldman, Claudia (2004). "Solving Transition Independent Decentralized Markov Decision Processes." *Journal of Artificial Intelligence Research*, Vol. 22, pp. 423–455.
23. Horling, Bryan; and Lesser, Victor (2004). "A Survey of Multi-Agent Organizational Paradigms." *The Knowledge Engineering Review*, Cambridge University Press, Vol. 19:4, pp. 281–316.
24. Lesser, V.; Decker, K.; Wagner, T.; Carver, N.; Garvey, A.; Horling, B.; Neiman, D.; Podorozhny, R.; NagendraPrasad, M.; Raja, A.; Vincent, R.; Xuan, P.; Zhang, X.Q. (2004). "Evolution of the GPGP/TAEMS Domain-Independent Coordination Framework." *Autonomous Agents and Multi-Agent Systems*. Kluwer Academic Publishers, 9 (1-2): 87–143.
25. Zhang, Xiaoqin; Lesser, Victor; Wagner, Tom (2004). "A Layered Approach to Complex Negotiations." *Web Intelligence and Agent Systems: An International Journal*. IOS Press, Netherlands, Vol. 2(2), pp. 91–104.
26. Carver, N. and Lesser, V.R. (2003). "Domain Monotonicity and the Performance of Local Solution Strategies for CDPS-based Distributed Sensor Interpretation and Distributed Diagnosis." *Autonomous Agents and Multi-Agent Systems*, Kluwer Academic Publishers, 6(1): 35–76.
27. Xiang, Y. and Lesser, V. (2003). "A Constructive Graphical Model Approach for Knowledge-Based Systems: A Vehicle Monitoring Case Study." *Computational Intelligence*, Blackwell Publishing, Vol. 19(3): 284–309.
28. Xiang, Y. and Lesser, V. (2003). "On the Role of Multiply Sectioned Bayesian Networks for Cooperative Multiagent Systems." *IEEE Transactions on Systems, Man, and Cybernetics*, Part A, Vol. 33(4), pp. 489–501.

29. Sandholm, T.; Lesser, V. (2002). "Leveled-Commitment Contracting: A Backtracking Instrument for Multiagent Systems." *AI Magazine*, Fall (23) 3, pp. 89–100.
30. Sandholm, T.; Lesser, V. (2001). "Leveled Commitment Contracts and Strategic Breach." *Games and Economic Behavior*, Special Issue on Economics and AI. Academic Press, Vol. 35, pp. 212–270.
31. Lesser, V.; Horling, B.; Raja, A.; Zhang, S.X.Q., Wagner, T. (2000). "Resource-Bounded Searches in an Information Marketplace." *IEEE Internet Computing*, Vol. 4, No. 2, Mar/Apr, pp. 49–58.
32. Lesser, V.; Horling, B.; Klassner, F.; Raja, A.; Wagner, T.; Zhang, S.X.Q. (2000). "BIG: An Agent for Resource-Bounded Information Gathering and Decision Making." *Artificial Intelligence, Special Issue on Internet Information Agents*, 118 (1-2), Elsevier Science, pp. 197–244.
33. Lesser, V. (1999). "Cooperative Multiagent Systems: A Personal View of the State of the Art." *IEEE Trans. Knowledge and Data Engineering*, Vol. 11, No. 1, pp. 133–142.
34. Nagendra Prasad, M.V. and Lesser, V. (1999). "Learning Situation Specific Coordination in Cooperative Multi-Agent Systems." *Autonomous Agents and Multi-Agent Systems*, Kluwer Academic Publishers, Vol. 2, pp. 173–207.
35. Lesser, V.R. (1998). "Reflections on the Nature of Multi-Agent Coordination and Its Implications for an Agent Architecture." *Autonomous Agents and Multi-Agent Systems*, Kluwer Academic Publishers, Vol. 1, pp. 89–111.
36. Nagendra Prasad, M.V.; Lesser, V.R. and Lander, S. (1998). "Learning Organizational Roles for Negotiated Search in a Multiagent System." *International Journal of Human-Computer Studies*, Vol. 48, pp. 51–67.
37. Sugawara, T. and Lesser, V.R. (1998). "Learning to Improve Coordinated Actions in Cooperative Distributed Problem-Solving Environments." *Machine Learning*, Kluwer, Vol. 33, Nos. 2-3, pp. 129–153.
38. Wagner, T.; Garvey, A.; and Lesser, V. (1998). "Criteria-Directed Task Scheduling." *International Journal of Approximate Reasoning*, Elsevier Science Inc., Vol. 19 (1-2), pp. 91–118.
39. Lander, S.; Lesser, V. (1997). "Sharing Meta-Information to Guide Cooperative Search Among Heterogeneous Reusable Agents." *IEEE Transactions on Knowledge and Data Engineering*, Vol. 9 (2): 193–208.
40. Oates, T.; Nagendra Prasad, M.V.; Lesser, V. (1997). "Cooperative Information-Gathering: A Distributed Problem-Solving Approach." *IEE Proceedings on Software Engineering—Special Issue on Agent-based Systems*, Vol. 144, No. 1, pp. 72–88.
41. Sandholm, T.W. and Lesser, V. (1997). "Coalitions Among Computationally Bounded Agents." *Artificial Intelligence, Special issue on Economic Principles of Multi-Agent Systems*, 94(1), pp. 99–137.
42. Garvey, A. and Lesser, V. (1996). "Design-to-time Scheduling and Anytime Algorithms." *SIGART Bulletin*, Vol. 7, No. 2, pp. 16–19.
43. Nagendra Prasad, M.V.; Lesser, V. and Lander, S. (1996). "Retrieval and Reasoning in Distributed Case Bases." *Journal of Visual Communication and Image Representation, Special Issue on Digital Libraries*, Vol. 7 (1): 74–87.
44. Lesser, V. R. (1995). "Multi-Agent Systems: An Emerging Subdiscipline of AI." *ACM Computing Surveys*, Vol. 27 (3): 340–342.
45. Lesser, V.; Nawab, H. and Klassner, F. (1995). "IPUS: An Architecture for the Integrated Processing and Understanding of Signals." *Artificial Intelligence*, 77, pp. 129–171.
46. Carver, N. and Lesser, V. (1994). "The Evolution of Blackboard Control Architectures." *Expert Systems with Applications—Special Issue on the Blackboard Paradigm and Its Applications*, Vol. 7, No. 1, Liebowitz (Ed.). New York: Pergamon Press, pp. 1–30.
47. Garvey, A. and Lesser, V. (1994). "A Survey of Research in Deliberative Real-Time Artificial Intelligence." *The Journal of Real-Time Systems*, 6(3): 317–347.
48. Carver, N. and Lesser, V.R. (1993). "A Planner for the Control of Problem-Solving Systems." *IEEE Transactions on Systems, Man, and Cybernetics – Special Issue on Planning, Scheduling and Control*. 23 (6): 1519–1536.

49. Decker, K. and Lesser, V.R. (1993). "Quantitative Modeling of Complex Environments." *International Journal of Intelligent Systems in Accounting, Finance and Management, special issue on Mathematical and Computational Models of Organizations: Models and Characteristics of Agent Behavior*, 2: 215–234.
50. Decker, K. and Lesser, V. (1993). "Analyzing a Quantitative Coordination Relationship." *Group Decision and Negotiation*, 2: 195–217.
51. Decker, K.; Garvey, A.; Humphrey, M. and Lesser, V. (1993). "Control Heuristics for Scheduling in a Parallel Blackboard System." *International Journal of Pattern Recognition and Artificial Intelligence*, 7 (2): 243–264.
52. Decker, K.; Garvey, A; Humphrey, M.; Lesser, V. (1993). "Real-Time Control Architecture for an Approximate Processing Blackboard System." *International Journal of Pattern Recognition and Artificial Intelligence*, 7 (2): 265–284.
53. Garvey, A. and Lesser, V. (1993). "Design-to-time Real-Time Scheduling." *IEEE Transactions on Systems, Man and Cybernetics – Special Issue on Planning, Scheduling and Control*. 23 (6): 1491–1502.
54. Sugawara, T. and Lesser, V. (1993). "Learning Control Rules for Coordination." *Multi-Agent and Cooperative Computation '93*, pp. 121–136.
55. Decker, K. and Lesser, V. (1992). "Generalizing the Partial Global Planning Algorithm." *International Journal on Intelligent Cooperative Information Systems*, 1(2): 319–346.
56. Lâasri, B.; Lâasri, H.; Lander, S. and Lesser, V. (1992). "A Generic Model for Intelligent Negotiating Agents." *International Journal on Intelligent Cooperative Information Systems*, 1(2): 291–317.
57. Moehlman, T.; Lesser, V. and Buteau, B. (1992). "Decentralized Negotiation: An Approach to the Distributed Planning Problem." *Group Decision and Negotiation* 1:2, K. Sycara (ed.), Norwell, MA: Kluwer Academic Publishers, pp. 161–192.
58. Conry, S.E.; Kuwabara, K.; Lesser, V.R. and Meyer, R.A. (1991). "Multistage Negotiation for Distributed Constraint Satisfaction." *IEEE Transactions on Systems, Man and Cybernetics*, 21(6): 1462–1477.
59. Durfee, E.H. and Lesser, V.R. (1991). "Partial Global Planning: A Coordination Framework for Distributed Hypothesis Formation." *IEEE Transactions on Systems, Man, and Cybernetics*, 21(5): 1167–1183. **Joint winner of IFAAMAS 2008 Influential Paper Award.**
60. Kuwabara, K. and Lesser, V. (1991). "Goal Conflict Detection in the Multistage Negotiation." *Transactions of Information Processing Society of Japan*, 32 (10): 1269–1280.
61. Lesser, V.R. (1991). "A Retrospective View of FA/C Distributed Problem Solving." *IEEE Transactions on Systems, Man, and Cybernetics*, 21(6): 1347–1362.
62. Decker, K.S.; Lesser, V.R. and Whitehair, R.C. (1990). "Extending a Blackboard Architecture for Approximate Processing." *The Journal of Real-Time Systems—Special Issue on AI*, 2(1/2): 47–79.
63. Lesser, V.R. (1990). "An Overview of DAI: Viewing Distributed AI as Distributed Search." *Journal of Japanese Society for Artificial Intelligence—Special Issue on Distributed Artificial Intelligence*, R. Nakano and S. Doshita (eds.), 5(4): 392–400.
64. Durfee, E.H.; Lesser, V.R.; Corkill, D.D. (1989). "Trends in Cooperative Distributed Problem Solving." *IEEE Transactions on Knowledge and Data Engineering*, 1(1), pp. 63–83.
65. Lefkowitz, L.S. and Lesser, V.R. (1989). "Knowledge Acquisition as Knowledge Assimilation." *International Journal of Man-Machine Studies*, Vol. 29, No. 2, pp. 215–226.
66. Durfee, E.H. and Lesser, V.R. (1988). "Incremental Planning to Control a Time-Constrained, Blackboard-Based Problem Solver." *IEEE Transactions on Aerospace and Electronic Systems—Special Issue on Space Telerobotics*, Vol. 24, No. 5, pp. 647–662.
67. Lesser, V.R.; Pavlin, J. and Durfee, E.H., (1988). "Approximate Processing in Real-Time Problem Solving." *AI Magazine*, Vol. 9, No. 1, pp. 49–61.
68. Durfee, E.H.; Lesser, V.R. and Corkill, D.D. (1987). "Coherent Cooperation Among Communicating Problem Solvers." *IEEE Transactions on Computers*, 36 (11): 1275–1291.
69. Hudlickà, E. and Lesser, V. (1987). "Modeling and Diagnosing Problem-Solving System Behavior." *IEEE Transactions on Systems, Man, and Cybernetics*, Vol. 17, No. 3, pp. 407–419.

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70. Nawab, H., Lesser, V.R. and Milios, E. (1987). "Diagnosing Using the Formal Theory of a Signal-Processing System." *IEEE Transactions on Systems, Man, and Cybernetics*, Vol. 17, No. 3, pp. 369–379.
71. Lesser, V.R. and Corkill, D.D. (1983). "The Distributed Vehicle Monitoring Testbed: A Tool for Investigating Distributed Problem Solving Networks." *AI Magazine*, 4(3): 15–33.
72. Lesser, Victor (1981). "Artificial Intelligence and Brain-Theory Research at Computer and Information Science Department, University of Massachusetts." *AI Magazine*, 3(1): 16–20.
73. Lesser, V.R. and Corkill, D.D. (1981). "Functionally-Accurate Cooperative Distributed Systems." *IEEE Transactions on Systems, Man, and Cybernetics - Special Issue on Distributed Problem-Solving*, Vol. SMC-11, No.1, pp. 81–96.
74. Erman, L.D.; Hayes-Roth, F.; Lesser, V.R. and Reddy, D.R. (1980). "The HEARSAY-II Speech Understanding System: Integrating Knowledge to Resolve Uncertainty." *Computing Surveys* 12 (2): 213–253.
75. Lesser, V.R. and Erman, L.D. (1980). "Distributed Interpretation: A Model and an Experiment." *IEEE Transactions on Computers - Special Issue on Distributed Processing*, Vol. C-29 (12): 1144–1163.
76. Fennell, R.D.; Lesser, V.R. (1977). "Parallelism in AI Problem Solving: A Case Study of HEARSAY-II." *IEEE Transactions on Computers - Special Issue on Multiprocessors*, C-26, 2, pp. 98–111.
77. Erman, L.D.; Fennell, R.D.; Lesser, V.R. and Reddy, D.R. (1976). "Systems Organization for Speech Understanding: Implications of Network and Multiprocessor Computer Architectures for AI." *IEEE Transactions on Computers - Special Issue on Artificial Intelligence*, C-25 (5): 414–421.
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2. Abdallah, Sherief; Sadleh, Sima; Rahwan, Iyad; Al Shamsi, Aamena; Lesser, Victor (2014). "DNVA: A tool for visualizing and analyzing multi-agent learning in networks." *Proceedings of 15th IEEE International Conference on Tools with Artificial Intelligence (ICTAI'14)*, Limassol, Cyprus, pp. 400–407.
3. Kim, Yoonheui; Lesser, Victor (2014). "DJAO: A Communication-Constrained DCOP Algorithm that Combines Features of ADOPT and Action-GDL." *Proceedings of the 28th AAAI Conference on Artificial Intelligence*, AAAI Press, pp. 2680–2687.
4. Lesser, Victor; Corkill, Daniel (2014). "Challenges for Multi-Agent Coordination Theory Based on Empirical Observations." *Proceedings of 13th International Conference on Autonomous Agents and Multiagent Systems*. Special track on Challenges and Visions. Lomuscia, A.; Scerri, P.; Bazzan, A.; and Huhns, M. (eds.), Paris, France. IFAAMAS, pp. 1157–1160.
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4. An, Bo; Lesser, Victor (2011). "Negotiation over Decommitment Penalty." (Extended Abstract.) *Proceedings of 10th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2011)*, Taipei, Taiwan, pp. 1101–1102.
5. Corkill, Daniel; Durfee, Edmund; Lesser, Victor; Zafar, Huzaifa; Zhang, Chongjie (2011). "Organizationally Adept Agents." In *Notes from the AAMAS 2011 International Workshop on Coordination, Organization, Institutions, and Norms in Agent Systems (COIN-2011)*, pp. 15–30.
6. Kim, Yoonheui; Lesser, Victor (2011). "Effective Variants of Max-Sum Algorithm to Radar Coordination and Scheduling." (Extended Abstract.) *Proceedings of 10th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2011)*. Tumer, Yolum, Sonenberg and Stone (eds.), Taipei, Taiwan, Vol. 3, pp. 1153–1154.
7. Mostafa, Hala; Lesser, Victor (2011). "A Compact Mathematical Formulation for Problems With Structured Agent Interactions." Sixth Annual Workshop on Multiagent Sequential Decision Making in Uncertain Domains (MSDM-2011), held in conjunction with AAMAS-2011, Taipei, Taiwan, pp. 55–62.
8. An, Bo; Gatti, Nicola, Lesser, Victor (2010). "Searching for Pure Strategy Equilibria in Bilateral Bargaining with One-Sided Uncertainty." (Short paper.) *Proceedings of 9th International Conference on Autonomous Agents and Multiagent Systems*, Toronto: IFAAMAS, pp. 1607–1608.
9. Cheng, Shanjun; Raja, Anita; Lesser, Victor (2010). "Multiagent Meta-level Control for Predicting Meteorological Phenomena." *Proceedings of AAI-2010 Workshop on Metareasoning in Robust Social Systems*, Technical Report WS-10-07, Atlanta, GA, pp. 6–13.
10. Kim, Yoonheui; Krainin, Michael; Lesser, Victor (2010). "Application of Max-Sum Algorithm to Radar Coordination and Scheduling." *Proceedings of 12th International Workshop on Distributed Constraint Reasoning*, Toronto, pp. 5–19.
11. Mostafa, Hala; Lesser, Victor (2010). "Exploiting Structure to Efficiently Solve Loosely Coupled Stochastic Games." *Proceedings of AAMAS 2010 Workshop on Multi-agent Sequential Decision-Making in Uncertain Domains*, Toronto, pp. 46–53.
12. An, Bo; Gatti, Nicola; Lesser, Victor (2009). "Extending Alternating-Offers Bargaining in One-to-Many and Many-to-Many Settings." (Short paper.) *Proceedings of 2009 IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology*, IEEE Computer Society, pp. 423–426.

13. Abdallah, Sherief; Lesser, Victor (2008). "Non-linear Dynamics in Multiagent Reinforcement Learning Algorithms." (Short paper.) *Proceedings of 7th International Conference on Autonomous Agents and Multiagent Systems*, Padgham, Parkes, Müller and Parsons (eds.). Estoril, Portugal, pp. 1321–1324.
14. An, Bo; Lesser, Victor; Sim, Kwang Mong (2008). "Decommitment in Multi-resource Negotiation." (Short paper.) *Proceedings of 7th International Conference on Autonomous Agents and Multiagent Systems*, Padgham, Parkes, Müller and Parsons (eds.). Estoril, Portugal, pp. 1553–1556.
15. Raja, Anita; Lesser, Victor (2008). "Coordinating Agent's Meta-Level Control." *Proceedings of AAAI Workshop on Metareasoning: Thinking about thinking*. Chicago: AAAI Press, pp. 106–112.
16. Zhang, Chongjie; Abdallah, Sherief; Lesser, Victor (2008). "Efficient Multi-Agent Reinforcement Learning through Automated Supervision" (Short paper.) *Proceedings of 7th International Conference on Autonomous Agents and Multiagent Systems*, Padgham, Parkes, Müller and Parsons (eds.). Estoril, Portugal, pp. 1365–1368.
17. Guo, AnYuan; Lesser, Victor (2006). "Stochastic Planning for Weakly-Coupled Distributed Agents" (Short paper). *Proceedings of 5th International Joint Conference on Autonomous Agents and Multi Agent Systems*. ACM Press, pp. 326–328.
18. Sims, Mark; Mostafa, Hala; Horling, Bryan; Zhang, Haizheng; Lesser, Victor; Corkill, Daniel (2006). "Lateral and Hierarchical Partial Centralization for Distributed Coordination and Scheduling of Complex Hierarchical Task Networks." *AAAI 2006 Spring Symposium on Distributed Plan and Schedule Management*.
19. Abdallah, Sherief; Zhang, Haizheng; Lesser, Victor (2004). "The Role of an Agent Organization in a Grid Computing Environment." *Workshop on Planning and Scheduling for Web and Grid Services*, held in conjunction with The 14th International Conference on Automated Planning and Scheduling (ICAPS 2004), Whistler, British Columbia, pp. 1–8.
20. Horling, Bryan; Mailler, Roger; and Lesser, Victor (2003). "Farm: A Scalable Environment for Multi-Agent Development and Evaluation." *Proceedings of the 2nd International Workshop on Software Engineering for Large-Scale Multi-Agent Systems (SELMAS 2003)*, pp. 171–177.
21. Rawlins, K.; Eliot, C.; Lesser, V.; Woolf, B. (2003). "Ontology Extraction for Educational Knowledge Bases." *AAAI Spring Symposium on Agent-Mediated Knowledge Management (AMKM)*.
22. Bazzan, A.L.C.; Lindemann, V.; Lesser, V.R. (2002). "A Domain-Independent Diagnosis Tool to Adapt Organizations in Learning Scenarios" (Extended abstract/poster session). *Proceedings of the 1st International Joint Conference on Autonomous Agents and Multiagent Systems*, ACM Press. Part 1: pp. 316–317.
23. Bazzan, A. L. C.; Lindemann, V.; Lesser, V. (2002). "Diagnosing Student Behavior in Learning Scenarios with a Domain-Independent Tool." *Proceedings of ITS Workshop on Architectures and Methodologies for Building Agent-Based Learning Environments*, Spain.
24. Jensen, David; Lesser, Victor (2002). "Social Pathologies of Adaptive Agents." *Safe Learning Agents: Papers from the 2002 AAAI Spring Symposium*. Volume TR SS-02-07, pp. 13–19.
25. Lesser, Victor (2002). "Evolution of the GPGP/TÆMS Domain Independent Coordination Framework" (Plenary lecture/extended abstract, poster session). *Proceedings of First International Conference on Autonomous Agents and Multi-Agent Systems*, Part 1. New York: ACM Press, pp. 1–2.
26. Eliot, C.; Woolf, B; Lesser, V. (2001). "Knowledge Extraction for Educational Planning." *Proceedings of AI & ED Workshop: Multi-Agent Architectures Supporting Distributed Learning*.
27. Shen, Jiaying; Lesser, Victor; Carver, Norman (2001). "Reasoning about Remote Data in CDPS with Distributed Bayesian Network." *Proceedings of Multi-Agent Systems and Applications—ACAI 2001 & EASSS 2001 Student Sessions*.
28. Wagner, T.; Lesser, V. (2001). "Evolving Real-Time Local Agent Control for Large-Scale Multi-Agent Systems" (Extended abstract/poster session). *Proceedings of the 5th International Conference on Autonomous Agents*, Montreal: ACM Press, pp. 17–18.
29. Kim, K.; Paulson, B.; Petrie, C.; Lesser, V. (2000). "Compensatory Negotiation for Agent-Based Project Schedule Coordination" (Extended abstract/poster session). *Proceedings of the 4th International Conference on Multi-Agent Systems (ICMAS'2000)*, Boston, pp. 405–406.

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31. Vincent, R; Horling, B; Lesser, V. (2000). "Experiences in Simulating Multi-Agent Systems" (Extended abstract/poster session). *Proceedings of the 4th International Conference on Multi-Agent Systems (ICMAS'2000)*, Boston, pp. 455-456.
32. Wagner, T. and Lesser, V. (2000). "State-based Control for Organizationally Situated Agents" (Extended abstract/poster session). *Proceedings of the 4th International Conference on Multi-Agent Systems (ICMAS'2000)*, Boston, pp. 457-458.
33. Lesser, V.; Horling, B.; Klassner, F.; Raja, A.; Wagner, T.; Zhang, S. (1999). "Recent Extensions to BIG: A Resource Bounded Information Gathering Agent." *Proceedings of AAAI Workshop on Intelligent Information Systems*. Orlando, Florida.
34. Wagner, Thomas; Shapiro, Jonathan; Xuan, Ping; Lesser, Victor (1999). "Multi-Level Conflict in Multi-Agent Systems." *Proceedings of the AAAI-99 Workshop on Negotiation in MAS*, AAAI Press, Orlando, Florida, pp. 50-55.
35. Wagner, T.; Benyo, B.; Lesser, V.; Xuan, P. (1999). "Investigating Interactions between Agent Conversations and Agent Control Components." *Agents'99 Workshop on Conversation Policies*.
36. Garvey, A. and Lesser, V. (1996). "Issues in Design-to-time Real-time Scheduling." *AAAI Fall Symposium Series on Flexible Computation*, pp. 38-43.
37. Neiman, D. E. and Lesser, V.R. (1996). "Comparing Coordination and Repair Strategies in a Distributed Scheduling System" (Abstract). *Proceedings of the 2nd International Conference on Multi-Agent Systems*, California: AAAI Press, pp. 452.
38. Bhandaru, M. and Lesser, V. (1995). "Discrepancy Directed Model Acquisition for Adaptive Perceptual Systems." *IJCAI-95 Workshop on Computational Auditory Scene Analysis*, Montreal.
39. Decker, K.S.; Lesser, V.R.; Nagendra Prasad, M.V., and Wagner, T. (1995). "MACRON: An Architecture for Multi-Agent Cooperative Information Gathering." *Proceedings of the CIKM'95 Workshop on Intelligent Information Agents*, Baltimore, Maryland.
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41. Decker, K.S. and Lesser, V.R. (1994). "Communication in the Service of Coordination." *Proceedings of the Workshop on Planning for Interagent Communication*, AAAI, Seattle.
42. Garvey, A.; Decker, K.; Lesser, V. (1994). "A Negotiation-based Interface between a Real-time Scheduler and a Decision-Maker." *Proceedings of Workshop on Models of Conflict Management in Cooperative Problem Solving*, AAAI, Seattle.
43. Sandholm, T. and Lesser, V. (1994). "Utility-Based Termination of Anytime Algorithms." *Proceedings of European Conference on AI: 1994 Workshop on Decision Theory for DAI Applications*, Amsterdam.
44. Bhandaru, M.; Draper, B. A. and Lesser, V. (1993). "Learning Image to Symbol Conversion." *AAAI 1993 Fall Symposium Series: Machine Learning in Computer Vision: What, Why and How?* AAAI Technical Report FS-93-04. Raleigh, North Carolina.
45. Klassner, F.; Lesser, V.; Nawab, H. (1993). "Fusing Multiple Reprocessings of Signal Data." *Proceedings of SPIE*, Vol. 2059: Sensor Fusion VI, Paul S. Schenker (ed.), p. 466-475.
46. Mammen, D. and Lesser, V. (1992). "Using Textures to Control Distributed Problem Solving." *Proceedings of the Workshop on Cooperation among Heterogeneous Intelligent Systems*, AAAI-92, San Jose, CA.
47. Lander, S., Lesser, V.R., and Connell, M.E. (1991). "Knowledge-based Conflict Resolution for Cooperation among Expert Agents." *Proceedings of the MIT-JSME Workshop on Computer-aided Cooperative Product Development*, pp. 253-268.
48. Decker, K.S. and Lesser, V.R. (1990). "A Scenario for Cooperative Distributed Problem Solving." *Proceedings of the 10th International Workshop on Distributed AI*.

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49. Connell, M.; Huff, K.E. and Lesser, V.R. (1989). "Implementing an Incremental Hierarchical Plan Recognition System." *Proceedings of the 2nd AAAI Workshop on Plan Recognition*, IJCAI-89, Detroit.
50. Lesser, Victor (1989). "Models of Problem Solving." *Reports on the MIT Distributed AI Workshop in SIGART Newsletter*, p. 51.
51. Croft, W.B.; Lefkowitz, L.S.; Lesser, V.R. and Huff, K.E. (1983). "POISE: An Intelligent Interface for Profession-Based Systems." *Proceedings of the Conference on Artificial Intelligence*, Rochester, Michigan.
52. Lesser, Victor (1983). "A Meta-Level Architecture for Distributed Problem Solving Systems" (Abstract). *Proceedings of the 1983 National Bureau of Standards Conference on Software Trends*, Washington.
53. Lesser, Victor (1982). Editor of review on Artificial Intelligence/Brain Theory at University of Massachusetts, *AI Magazine*.
54. Lesser, Victor (1980). "Cooperative Distributed Problem Solving and Organizational Self-Design." *Reports on the MIT Distributed AI Workshop in SIGART Newsletter*, p. 46.
55. Lesser, V.R.; Corkill, D.D. (1978). "Functionally Accurate Distributed Problem Solving Systems." *Proceedings of DARPA Workshop on Distributed Sensor Nets*, CMU, Pittsburgh PA, pp. 21-26.
56. Wu, YU. S., Lesser, V.R. et al. (1974). "Report of the Navy Ad Hoc Software Maintainability Committee," Naval Research Laboratory (5490-325:YSW), Washington DC.
57. Lesser, Victor (1973). "A Dynamically Reconfigurable Multiple Micro-Processor." *Proceedings of International Workshop on Computer Architecture*, Grenoble, France, pp. 1-16.
58. Lesser, V.R. (1970). "Direct Emulation of Control Structures by a Parallel Micro-computer." SLAC Report 127 UC-32, Stanford University. Also presented at 3rd Annual Workshop on MicroProgramming, Buffalo NY.
59. Lesser, Victor (1966). "A Modified Two-Level Search Algorithm Using Request Clustering." Scientific Report No. ISR-11, to National Science Foundation.

Technical Reports (Not represented elsewhere)

1. Garant, Daniel; da Silva, Bruno; Zhang, Chongjie; Lesser, Victor (2015) "Accelerating Multi-agent Reinforcement Learning with Dynamic Co-learning." School of Computer Science Technical Report UM-CS-2015-004, University of Massachusetts Amherst.
2. Corkill, Daniel; Garant, Daniel; Lesser, Victor (2015); "Exploring the Effectiveness of Agent Organizations." School of Computer Science Technical Report UM-CS-2015-005, University of Massachusetts Amherst.
3. Utgoff, Paul; Jensen, David; Lesser, Victor (2000). Inferring Task Structure From Data. *University of Massachusetts Amherst, Computer Science Department Technical Report 00-54*.
4. Wagner, T. and Lesser, V. (1999). Relating Quantified Motivations for Organizationally Situated Agents. *University of Massachusetts-Amherst Computer Science Technical Report 99-21*.
5. Wagner, Thomas; Lesser, Victor (1999). Toward Generalized Organizationally Contexted Agent Control. *University of Massachusetts Amherst Computer Science Technical Report 99-18*.
6. Bazzan, A.L.C.; Lesser, V.R. and Xuan, P. (1998). Adapting an Organizational Design through Domain-Independent Diagnosis. *University of Massachusetts Amherst Computer Science Technical Report 1998-14*.
7. Zilberstein, S. and Lesser, V. (1996). Intelligent Information Gathering Using Decision Models. *University of Massachusetts Amherst Computer Science Technical Report 96-35*.
8. Long, Q. and Lesser, V. (1995). A Heuristic Real-Time Parallel Scheduler Based on Task Structures. *University of Massachusetts Amherst Computer Science Technical Report 95-92*.
9. Mammen, D.; Fujita, S.; Lesser, V. (1995). Predicting Solution Time for Constraint Satisfaction Problems Using Backtracking. *University of Massachusetts Amherst Computer Science Technical Report 95-44*.
10. Whitehair, R. and Lesser, V. (1995). A Methodology for Modeling Sophisticated Problem Solvers. *University of Massachusetts Amherst Computer Science Technical Report 95-37*.

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11. Whitehair, R. and Lesser, V. (1995). Formal Analysis Techniques for Heuristic Control Strategies in Blackboard-Based Interpretation Systems. *University of Massachusetts Amherst Computer Science Technical Report 95-38*.
12. Whitehair, R. and Lesser, V. (1995). IDP: A Formalism for Modeling and Analyzing Complex Interpretation Problem Domains. *University of Massachusetts Amherst Computer Science Technical Report 95-39*.
13. Sandholm, T. and Lesser, V. (1994). Utility-Based Termination of Anytime Algorithms. *University of Massachusetts Amherst Computer Science Technical Report 94-54*.
14. Whitehair, R. and Lesser, V.R. (1993). A Framework for the Analysis of Sophisticated Control in Interpretation Systems. *University of Massachusetts Amherst Computer Science Technical Report 93-53*.
15. Huff, K.E. and Lesser, V.R. (1988). Plan Recognition in Open Worlds. *University of Massachusetts Computer and Information Science Department Technical Report 88-18*.
16. Huff, K.E. and Lesser, V.R. (1987). Metaplans that Dynamically Reformulate Plans. *University of Massachusetts Computer and Information Science Department Technical Report 87-10*.
17. Huff, K.E.; Lesser, V.R. (1987). A Plan-Based Intelligent Assistant that Supports the Process of Programming. *University of Massachusetts Computer and Information Science Department Technical Report 87-09*.
18. Huff, K.E. and Lesser, V.R. (1987). The GRAPPLE Plan Formalism. *University of Massachusetts Computer and Information Science Department Technical Report 87-08*.
19. Hudlickà, E.; Lesser, V.R.; Pavlin, J.; Rewari, A. (1986). Design of a Distributed Diagnosis System. *University of Massachusetts Computer and Information Science Department Technical Report 86-63*.
20. McCue, D.L.; Lesser, V.R. (1983). Focusing and Constraint Management in Intelligent Interface Design. *University of Massachusetts Computer and Information Science Department Technical Report 83-36*.
21. Pang, Yun-Jie, House, D.H., and Lesser, V.R. (1983). A Procedure-Based Chinese-Style Landscape Painting System, Computer Hua-Jia (Picture Master).
22. Huff, K.E. and Lesser, V.R. (1982). Knowledge-Based Command Understanding: An Example for the Software Development Environment. *University of Massachusetts Computer and Information Science Department Technical Report 82-6*.
23. Reed, S. and Lesser, V.R. (1980). Division of Labor in Honey Bees and Distributed Focus of Attention. *University of Massachusetts Computer and Information Science Department Technical Report 80-17*.
24. Brooks, R.S. and Lesser, V.R. (1979). Distributed Problem Solving Using Iterative Refinement. *University of Massachusetts Computer and Information Science Department Technical Report 79-14*.
25. Fuller, S. H.; Almes, G.T.; Broadley, W.H.; Forgy, G.L.; Karlton, P.L.; Lesser, V.R., and Teter, J.R. (1975). PDL-11/40E Microprogramming Reference Manual. *Carnegie-Mellon University, Computer Science Department Technical Report, Pittsburgh*.
26. Lesser, V.R. Dynamic Control Structures and Their Use in Emulation. (Ph.D. Thesis), *Report No. CS-309, Computer Science Department, Stanford, California*.
27. Lesser, V.R. (1968). A Computer Organization Designed to Separate Data-Accessing from the Computation Algorithm. *Computer Science Report No. 90, Stanford University, 1968*.

Ph.Ds Completed under Lesser's Supervision at the University of Massachusetts Amherst

Richard Brooks, 1983 "Experiments in Distributed Problem Solving."

Daniel Corkill, 1983 "A Framework for Organizational Self-Design in Distributed Problem-Solving Networks."

Jasmina Pavlin, 1985 "A Model for Prediction and Description of Knowledge-Based System Behavior."

Eva Hudlicka, 1986 "Diagnosing Problem Solving System Behavior."

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- Edmund Durfee**, 1987 “A Unified Approach to Dynamic Coordination: Planning Actions and Interactions in a Distributed Problem Solving Network.” (NSF presidential young investigator award; AAAI Fellow; IEEE Fellow)
- Lawrence Lefkowitz**, 1987 “Knowledge Acquisition through Anticipation of Modifications.”
- Karen Huff**, 1989 “Plan-Based Intelligent Assistance: An Approach to Supporting the Software Development Process.”
- Norman Carver**, 1990 “Sophisticated Control for Interpretation: Planning to Resolve Sources of Uncertainty.”
- Philip Johnson**, 1990 “Type Flow Analysis for Exploratory Software Development.” (Co-chaired with J. Wileden)
- David Forster**, 1991 “The Generation of Temporal Expressions in Natural Language.”
- Penelope Sibun**, 1991 “Locally Organized Text Generation.”
- Daniel Neiman**, 1992 “Design and Control of Parallel Rule-Firing Production Systems.”
- Susan Lander**, 1994 “Distributed Search and Conflict Management among Reusable Heterogeneous Agents.”
- Keith Decker**, 1995 “Environment Centered Analysis and Design of Coordination Mechanisms.” (Recipient of NSF Career award)
- Alan Garvey**, 1996 “Design-to-time Real-time Scheduling.”
- Robert Whitehair**, 1996 “A Framework for the Analysis of Sophisticated Control.”
- Tuomas W. Sandholm**, 1996 “Negotiation among Self-Interested Computationally Limited Agents.” (NSF Career award; IJCAI’03 Computer & Thought Award; ACM/SIGART 2001 Autonomous Agents Research Award; AAAI Fellow)
- Frank Klassner**, 1996 “Data Reprocessing in Signal Understanding Systems.”
- M. V. Nagendra Prasad**, 1997 “Learning Situation-Specific Control in Multi-Agent Systems.”
- Malini K. Bhandaru**, 1998 “Learning Object Models for Adaptive Perceptual Systems.”
- Thomas Wagner**, 1999 “Towards Quantified Control for Organizationally Situated Agents.”
- Ping Xuan**, 2002 “Uncertainty Handling and Decision Making in Multi-Agent Cooperation.”
- XiaoQin “Shelley” Zhang**, 2002 “Sophisticated Negotiation In Multi-Agent Systems.”
- Zachary Rubinstein**, 2002 “Efficient Scheduling of Evolving, Nondeterministic Process Plans in Dynamic Environments.”
- Anita Raja**, 2003 “Meta-Level Control in Multi-Agent Systems.”
- Roger Mailler**, 2004 “A Mediation-Based Approach to Cooperative, Distributed Problem Solving.”
- Bryan Horling**, 2005 “Quantitative Organizational Modeling and Design for Multi-Agent Systems.”
- Sherief Abdallah**, 2006 “Scalable Cooperative Multiagent Reinforcement Learning in the Context of an Organization.”
- Raphen Becker**, 2006 “Exploiting Structure in Decentralized Markov Decision Processes” (Co-chaired with S. Zilberstein)
- AnYuan Guo**, 2006 “Planning and Learning for Weakly-Coupled Distributed Agents”
- Haizheng Zhang**, 2006 “Learning Based Organizational Approaches for Peer-to-Peer Based Information Retrieval Systems.”
- Jiaying Shen**, 2007 “Communication Management in Distributed Sensor Interpretation.”
- Bo An**, 2011 “Automated Negotiation for Complex Multi-Agent Resource Allocation.”
- Hala Mostafa**, 2011 “Exploiting Structure in Coordinating Multiple Decision Makers.”
- Chongjie Zhang**, 2011 “Scaling Multi-Agent Learning in Complex Environments.”

Yoonheui Kim, 2015 “Application of Techniques for Map Estimation to Distributed Constraint Optimization Problem.”

Research Grants

Principal Investigator, NSF, “RI: Small: Coordinating Multi-Agent Learning through Emergent Distributed Supervisory Control.” \$450,000, 9/1/11–8/31/14.

Principal Investigator, NSF, “RI: Medium: Collaborative Research: Creating Organizationally Adept Software Agents and Their Organizations.” \$720,000, 5/8/10–5/31/13.

Associated Faculty, NSF ERC “Center for Collaborative Adaptive Sensing of the Atmosphere (CASA),” 2/11/05–8/31/11.

Principal Investigator, Lockheed Martin, “Integrated Learning,” \$698,540, 5/30/06–12/30/09.

Principal Investigator, Raytheon Co., “Multi-Agent Approach for Heterogeneous Persistent Surveillance,” \$100,000, 11/12/08–8/29/09.

Principal Investigator, NSF, “Collaborative Research: Distributed Interpretation in a Communication-Limited Environment,” \$375,000, 05/15/05–4/30/09.

Co-Principal Investigator (with PI, S. Zilberstein), NSF, “ITR: A Formal Study of Coordination & Control of Collaborative Multi-Agent Systems Using Decentralized MDPs,” \$500,000, 9/1/02–8/31/07 (included two supplemental REU awards: \$10,000 in 2003 and \$6,000 in 2004).

Principal Investigator, Honeywell International, Inc. (DARPA/AFRL Prime), “DARPA/IPTO Coordinators Program.” \$722,331, 02/11/05 – 06/30/07.

Principal Investigator, Boeing, “Dynamic Airspace Deconfliction,” \$99,999, 04/20/04 – 12/1/04.

Principal Investigator, NSF, “NSF-CNPq Collaborative Research: Combining Cognitive & Utilitarian Coordination in a Layered Agent Architecture,” \$199,683, 10/01/00 – 9/30/04.

Principal Investigator, NSF, “Formalizing Distributed Search in Cooperative Distributed Problem-Solving Systems,” \$157,001, 09/01/00 – 08/31/04.

Principal Investigator, Honeywell International (DARPA Prime), “Coordinators Subcontract: Cognitive Personal Coordination Assistants,” \$50,000, 6/6/03–5/31/04.

Co-Principal Investigator (with PI, S. Zilberstein), NASA Advanced Cross Enterprise Technology Development, “Self-Directed Cooperative Planetary Rovers,” \$897,441, 3/1/01–2/29/05.

Principal Investigator, DARPA/Air Force, “Scalable Real-Time Negotiation Toolkit,” \$1,808,940, 6/29/99–12/30/03.

Principal Investigator (with David Jensen), NSF, “Enhancing Robustness of Information Systems through Distributed Adaptive Coordination,” \$416,549, 9/1/98–8/31/02 (Including 2 \$15K REU supplements).

Co-Principal Investigator (with PI, Abhijit Deshmukh), NSF, “Emergent Organizational Structures in Multi-Agent Scalable Enterprises,” \$108,243, 07/01/00 – 06/30/02.

Co-Principal Investigator (with PI, Rod Grupen), DARPA, “Software Control Framework for Learning Coordinated, Multi-robot Strategies in Open Environments,” \$1,148,863, 06/01/99 – 4/30/02.

Principal Investigator, GuideNet, Inc. (CEROS Prime), “Software Agents to Acquire and Visualize Environmental Information for ASW Surveillance,” \$67,500, 9/18/98 – 12/31/00.

Co-Principal Investigator (with PI, W. Bruce Croft), NSF–State/Industry, “SIUCRC on Intelligent Information Retrieval,” \$7,200,000, 9/1/92–8/31/00.

Co-Principal Investigator (with PI, Beverly Woolf), NSF, “Multi-Agent Instructional Communities: A computational & experimental approach,” \$100,000, 9/15/99 – 8/30/00.

Co-Principal Investigator (with PI, S. Zilberstein), NSF, “Intelligent Information Gathering Using Decision Models,” \$322,910, 8/1/96–7/31/00.

Principal Investigator, Office of Naval Research (AASERT program), “AASERT Proposal: Survivability of Distributed Situation Assessment,” \$202,358, 6/1/97–5/30/00.

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Principal Investigator, DARPA/AFRL, "Enhancing Survivability with Distributed Adaptive Coordination," \$465,000, 6/4/97–9/30/99.

Principal Investigator, NSF, "Towards an Architecture and Theory for Agent Coordination," \$415,238, 9/15/95–8/31/99.

Principal Investigator, Boeing Helicopter, "Manufacturing Automation and Design Engineering," \$150,000, 8/1/96–7/31/98.

Principal Investigator, ONR, "Distributed Real-Time Situation Assessment," \$663,272, 7/1/95–6/30/98.

Principal Investigator, NSF, "Control Issues in Asynchronous Parallel Knowledge-Based AI Programs," \$154,546, 6/1/94–5/31/98.

Principal Investigator, Carnegie Group, Inc., "A Joint Task Force Application," \$30,000, 6/1/97–11/30/97.

Principal Investigator, ONR, "Distributed Real-Time Situation Assessment Using the DRESUN System," \$732,797, 3/15/92–10/1/95.

Co-Principal Investigator (with PI, W. Rick Adrion), NSF-CRICCS, "Intelligent Real-Time Complex Computing Systems," \$1,305,000, 7/1/92–6/30/95.

Principal Investigator, DARPA, "Coordinated Negotiated Search: A Generic Framework for Distributed Planning, Scheduling, and Resource Allocation," \$927,729, 5/15/92–5/14/95.

Principal Investigator, Rome Laboratories, "A Signal Re-Processing Architecture for Knowledge-Based Signal Processing," \$800,260, 4/1/91–3/31/94.

Principal Investigator, Network General Corporation, "Research in Distributed Problem Solving and Telecommunications," \$30,000, 1993.

Principal Investigator, DARPA, "Coordination in Distributed Problem-Solving Networks," \$813,009, 4/15/89–4/14/92.

Principal Investigator, ONR URI, "Center of Excellence in Artificial Intelligence," \$3,236,664, 9/15/86–3/14/92.

Co-Principal Investigator with K. Ramamritham and E. Riseman, NSF, "A Research Facility for Cooperative Distributed Computing: Integrating Research in AI and Distributed Computing," \$4,682,247 (plus \$1,074,564 in University matching funds), 7/1/85–12/31/90. (Rotating PI among Co-PIs)

Principal Investigator, RADC, "A Knowledge Acquisition, Assistance and Explanation System," \$2,200,000, 2/1/85–1/31/90.

Principal Investigator, RADC, "Distributed Planning for Dynamic Environments in the Presence of Time Constraints," \$63,401, 8/2/88–9/30/89.

Principal Investigator, RADC, "High-Level Adaptive Signal Processing," \$93,000, 1/31/89–9/30/89.

Principal Investigator, DARPA, "Coordination in Distributed Problem Solving," \$750,000, 10/1/85–9/30/88.

Principal Investigator, "Cooperative Distributed Problem Solving," Joint-NSF/DARPA Funding (1978–1988), \$2,500,000.

Co-Principal Investigator with Paul Cohen, DARPA, "Proposal to RADC and DARPA Expert System Technology Program," \$500,000, 1/1/85–12/31/87.

Principal Investigator, GTE Labs, "Meta-Level Control Through Situation Analysis," \$25,000, 1985–1986.

Acting Co-Principal Investigator of the Vision Research Project, National Science Foundation Grant (1978).

Principal system designer and project leader of the system's implementation group of the Hearsay-II Speech Understanding Project at Carnegie-Mellon University. This group consisted of six people—three professionals and three graduate students (1972–1976).

Participation on Doctoral Committees

Internal Committee Member

Martin Allen	Carol Broverman	Mohammad Ghavamzadeh
Christopher Amato	Alan Carlin	Helen Gigley
Scott Anderson	Robert Crites	Joshua Grass
Ron Arkin	Christopher Eliot	Eric Hansen
Peter Bates	Andrew Fast	David Hildum
Carla Brodley	Richard Fennell *	Adele Howe

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Marty Humphrey
Charles Kohl
Ralf Kohler
Akshat Kumar
Steve Levitan

John Lowrance
Alan Morse
James T. Oates
Megan Olsen
Michael Poe

Matthew Schmill
Robert St. Amant
Dan Suthers
Xiaoxi Xu

**Committee participation occurred while at Carnegie-Mellon University*

External Committee Member

James Atlas, University of Delaware
Tim Baarslag, TU Delft
Chris Beck, University of Toronto
Erkan Dorken, Boston University
Eithan Ephrati, The Hebrew University of
Jerusalem
John Graham, University of Delaware
Clifford Grossner, McGill University
Jingwei Huang, University of Toronto
Sachin Kamboj, University of Delaware
Gal Kaminka, University of Southern California
Naga Kropalli, U Massachusetts Amherst
Janusz Marecki, University of Southern California
Jay Modi, University of Southern California
Daniel Serain, Institut National Polytechnique de
Grenoble**

Barbara Staudt Lerner, Carnegie-Mellon University
Peter Stone, Carnegie-Mellon University
Ruben Stranders, University of Southampton, UK
Gerhard Weiss, Johannes-Kepler University, Germany
Rob Weitz, U Massachusetts Amherst
Minjie Zhang, The University of New England, Australia

***Principal research advisor*

External Examiner (Habilitation):

Samir Aknine, University Paris 6

Administrative Responsibilities

Program Committees, Conference/Workshop Leadership, Panels:

Organizing Committee, Blue Sky Ideas Track Chair, 14th International Conference on Autonomous Agents and Multiagent Systems, Istanbul, 2015.
Senior Program Committee, 13th International Conference on Autonomous Agents and Multiagent Systems, Paris, France, 2014.
Senior Program Committee, 12th International Conference on Autonomous Agents and Multiagent Systems, St. Paul, MN, 2013.
Independent Steering Group, BAE Systems/EPSC Strategic Partnership in Decentralised Data and Information Systems, Bristol, United Kingdom, 2006–2011.
Senior Program Committee, 9th International Conference on Autonomous Agents and Multiagent Systems (AAMAS'10), Toronto, 2010.
Program Committee, The 4th SNA-KDD Workshop on Social Network Mining and Analysis, Washington, DC, 2010.
Program Committee, AAAI Workshop on Metacognition for Robust Social Systems, Atlanta, GA, 2010.
Program Committee, 7th European Workshop on Multi-Agent Systems (EUMAS), Cyprus, 2009.
Program Committee, SASO-09 Workshop on Metareasoning in Self-Adaptive Systems, San Francisco, 2009.
Area Chair, Senior Program Committee and Session Chair, Eighth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), Budapest, 2009.
Program Committee, Third International Workshop on Agent Technology for Sensor Networks (ATSN), co-located with AAMAS, Budapest, 2009.
Program Committee, 7th International Workshop on Coordination, Organization, Institutions and Norms in Agents, co-located with AAMAS, Budapest, 2009.
Program Committee, Main Track. 7th International Conference on Autonomous Agents and Multiagent Systems (AAMAS), Estoril, Portugal, 2008.

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- Program Committee, AAMAS Workshop on Multi-Agent Sequential Decision Making in Uncertain Multi-Agent Domains, Estoril, Portugal, 2008.
- Program Committee, AAMAS Second International Workshop on Agent Technology for Sensor Networks (ATSN), Estoril, Portugal, 2008.
- Program Committee, IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT), Sydney, Australia, 2008.
- Program Committee, 6th European Workshop on Multi-Agent Systems (EUMAS), Bath, UK, 2008.
- Program Committee, ICAPS Workshop on Multiagent Planning, Sydney, Australia, 2008.
- Program Committee, AAAI Workshop on Coordination, Organizations, Institutions and Norms (COIN). Chicago, 2008.
- Program Committee, AAAI Workshop on Metareasoning: Thinking about thinking. Chicago, 2008.
- Program Committee, 5th European Workshop on Multi-Agent Systems (EUMAS), Hammamet, Tunisia, 2007.
- Steering Committee, Workshop on Coordination, Organization, Institutions and Norms in agent systems (COIN), held in conjunction with Sixth International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), Honolulu, 2007.
- Program Committee, Joint 9th WebKDD and 1st SNA-KDD Workshop on Web Mining and Social Network Analysis, held in conjunction with The 13th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), San Jose, CA, 2007.
- Program Committee, Sixth International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), Honolulu, 2007.
- Program Committee, First International Workshop on Agent Technology on Sensor Networks, held in conjunction with AAMAS, Honolulu, 2007.
- Program Committee, Workshop on Coordinating Agents' Plans and Schedules (CAPS07), held in conjunction with AAMAS, Honolulu, 2007.
- Program Committee, Workshop on Meta-Reasoning in Agent-Based Systems, held in conjunction with AAMAS, Honolulu, 2007.
- Program Committee, Workshop on Multi-agent Sequential Decision Making in Uncertain Domains, held in conjunction with AAMAS, Honolulu, 2007.
- Program Committee, Workshop on Coordination and Control in Massively Multi-Agent Systems (CCMMS 2007), held in conjunction with AAMAS, Honolulu, 2007.
- Program Committee, 2005 IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT), Compiègne, France, 2005.
- Program Committee, 2nd IEEE Symposium on Multi-Agent Security and Survivability (MAS&S). Drexel University, 2005.
- Program Committee, Fourth International Joint Conference on Autonomous Agents & Multi-Agent Systems (AAMAS), Utrecht, 2005.
- Program Committee, International Workshop on Organizations in Multi-Agent Systems "From Organizations to Organization-Oriented Programming In MAS" (OOOP), Utrecht, 2005.
- Program Committee, 18th International Conference on Industrial & Engineering Applications of Artificial Intelligence & Expert Systems, held in Bari, Italy, 2005.
- Program Committee, 2nd International Workshop on Safety and Security in Multiagent Systems, 2005.
- Program Committee, 17th Brazilian Symposium on Artificial Intelligence (SBIA), São Luis, Brazil, 2004.
- Program Committee, 8th International Workshop on Cooperative Information Agents, Erfurt, Germany, 2004.
- Program Committee, IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT'04), Beijing, 2004.
- Program Committee, First IEEE Symposium on Multi-Agent Security and Survivability (MAS&S), Drexel University, Philadelphia, 2004.

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- Program Committee, AAAI Workshop on Agent Organizations: Theory and Practice, at the National Conference on Artificial Intelligence (AAAI), San Jose, California, 2004.
- Senior Program Committee, 3rd International Conference on Autonomous Agents and Multi-Agent Systems, New York, 2004.
- Program Committee, AAMAS Workshop on Challenges in the Coordination of Large-Scale Multi-Agent Systems, New York, 2004.
- Program Committee, 1st International Workshop on Safety and Security in Multi-Agent Systems, held at AAMAS, New York, 2004.
- Organizing Committee, 2nd Annual Americas School on Agents and Multiagent Systems, 2003.
- Senior Program Committee, 2nd International Joint Conference on Autonomous Agents & Multi-Agent Systems (AAMAS), Melbourne, Australia, 2003.
- Organizing Committee, 1st Workshop on Safe Agents, Second International Joint Conference on Autonomous Agents & Multi-Agent Systems (AAMAS), Melbourne, Australia, 2003.
- Program Committee, 4th Iberoamerican Workshop on Multi-Agent Systems — *Agent Technology and Software Engineering*, University of Málaga, Spain, 2002.
- Organizing Committee, 3rd Workshop on “Norms and Institutions in Multi-Agent Systems” at 1st International Joint Conference on Autonomous Agents & Multi-Agent Systems (AAMAS), Bologna, Italy, 2002.
- Doctoral Mentoring Programme Committee, 1st International Joint Conference on Autonomous Agents & Multi-Agent Systems (AAMAS), Bologna, Italy, 2002.
- Joint Oversight Committee, 1st International Joint Conference on Autonomous Agents & Multi-Agent Systems (AAMAS), Bologna, Italy, 2002.
- Organizing Committee, “Regulated Agent-Based Social Systems: Theories and Applications” at 1st International Joint Conference on Autonomous Agents & Multi-Agent Systems (AAMAS), Bologna, Italy, 2002.
- Organizing Committee, AAAI Workshop on “Automation as Caregiver: The Role of Intelligent Technology in Elder Care,” 2002.
- Organizing Committee, First Annual Americas School on Agents and Multiagent Systems, University of Southern California, 2002.
- Program Committee, 1st International Joint Conference on Autonomous Agents & Multi-Agent Systems (AAMAS), Bologna, Italy, 2002.
- Organizing Committee, Autonomous Agents 2nd Workshop on Infrastructure for Agents, MAS and Scalable MAS, 2001.
- Organizing Committee, AAAI Fall Symposium Series, Workshop on Autonomous Negotiating Systems, 2001.
- Search Committee for Chief AI Scientist, Rome Labs, 2000–2001.
- Program Committee, Third IberoAmerican Workshop on Distributed Artificial Intelligence and Multi-Agent Systems, 2000.
- Program Committee, PRIMA (Pacific Rim International Workshop on Multi-Agents), 2000.
- Organizing Committee, Autonomous Agents 2000 Workshop: Norms and Institutions in Multiagent Systems. Barcelona, 2000.
- Program Committee, Autonomous Agents 2000 Workshop: Infrastructure for Scalable Multiagent Systems. Barcelona, 2000.
- Program Committee, ECAI Workshop on Modeling Artificial Societies and Hybrid Organizations, 2000.
- Organizing Committee, Real-Time Autonomous Systems Workshop, Spring Symposium Series, AAAI 2000.
- Program Committee, International Conference and Exhibition on the Practical Application of Intelligent Agents and Multi-Agent Technology (PAAM), 1996–2000.
- Program Committee, ECAI Workshop on Intelligent Agents for Telecom Applications (IATA’96 and IATA’99), 1996, 1999.
- Program Committee, AAAI’99 Workshop on Negotiation: Settling Conflicts and Identifying Opportunities.

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Program Committee, PRIMA'99 (Pacific Rim International Workshop on Multi-Agents), 1999.
Organizing Committee, Satisficing Models Workshop, AAAI'98 Spring Symposium Series.
Program Organizing Committee, Constraints and Agents Workshop, AAAI-97.
Organizing Committee, Multi-Agent Learning Workshop, AAAI'97.
Steering Committee, NSF Workshop on Future Directions of the Information Technology and Organization (ITO) Program, 1997.
Program Committee, Australian DAI Workshop, 1995-1998.
Program Committee, ICMAS'96 Workshop on Learning, Interaction and Organizations in MultiAgent Environments, 1996.
Session Chair, 2nd International Conference on MultiAgent Systems, Negotiation Session, 1996.
Panelist, "Future of Multi-agent Systems," 2nd International Conference on Multi-Agent Systems, 1996.
Program Committee, ECAI96 Workshop on Learning in Distributed Artificial Intelligence Systems, 1996.
Program Committee, International Conference on Cooperative Information Systems (CoopIS), 1994-1995.
Program Committee, International Workshop on Feature Interactions in Telecommunications Software Systems, 1994-1995.
Reviewer, International Joint Conference on Artificial Intelligence (IJCAI), 1995.
Reviewer, IJCAI'95 Workshop on Computational Auditory Scene Analysis, 1995.
Panel Member, NSF Information Technology and Organization Proposal Review Panel, 1994.
Program Committee, AAAI Workshop on Models of Conflict Management in Cooperative Problem Solving, 1994.
Program Committee, Workshop on Distributed Artificial Intelligence, 1988-1989, 1994.
Program Committee, Canadian Workshop on Distributed Artificial Intelligence, 1994.
Program Committee, Conference on Cooperating Knowledge-Based Systems, Keele, UK, 1994.
Program Committee, Workshop on Computational Models of Conflict Management in Cooperative Problem Solving at IJCAI, 1993.
Panel Member, ARPA Review Panel on Advanced Distributed Simulation, 1993.
Program Committee, Area Chair for "Communication and Cooperation," AAAI, 1993.
Panel member, NSF CER and CISE Research Infrastructure Proposals, 1984, 1987, 1992, 1993.
Advisory Board Member, Workshop on Distributed Artificial Intelligence, 1990-1993.
Program Committee, IEEE Workshop on Imprecise and Approximate Computation, 1992.
Program Committee, International Conference on Distributed Computing Systems, 1991.
Program Committee, Fifth Annual Blackboard Workshop at AAAI, 1991.
Program Committee, Real-Time Systems Workshop at AAAI, 1990.
Program Committee, Working Conference on Cooperating Knowledge-Based Systems, 1990.
Program Committee, Ninth European Conference on Artificial Intelligence, 1990.
Program Committee, Blackboard Workshop at AAAI/IJCAI, 1988-1990.
Program Committee, IJCAI, 1989.
Program Committee, Workshop on Integrated Manufacturing, IJCAI, 1989.
Program Committee, Annual AI Systems in Government Conference, 1989.
Program Committee, Fifth IEEE Conference on AI Applications, 1988-1989.
Program Committee, AAAI, 1988.
Program Committee, Canadian AI Conference, 1984.
Invited Panelist, Panel on Information Processors as Organizations, National Conference on AI, 1984.

University-Related Committee Work:

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Member, Strategic Planning Committee, Computer Science Department, 2007–2011.

Member, Executive Committee, Computer Science Department, 1985–1987, 1995–1996, 2010–2011.

Member, Graduate Program Committee, Computer Science Department, 2010–2011.

Member, College of Natural Sciences Faculty & Staff Awards Committee, 2010.

Member, Personnel Committee, Computer Science Department, 1979–1980, 1984–1985, 1987–1989, 1993, 1999–2000, 2005–2006, 2008–2009.

Member, Selection Committee for UMass Amherst Faculty Convocation, 2008–2009.

Member, Personnel Committee, College of Natural Sciences and Mathematics, 1992–1995, 2000–2003, 2007–2008.

Member, Search Committee for Interim Dean, College of Natural Sciences and Mathematics, 2007–2008.

Acting Co-Director, Distributed Research Thrust of NSF Engineering Research Center for Collaborative Adaptive Sensing of the Atmosphere (CASA), 2006–2007).

Chair, Personnel Committee, Computer Science Department, 1997–1998, 1998–1999, 2003–2004, 2006–2007.

Member, Faculty Recruiting Committee, Computer Science Department, 2000–2002, 2005–2006.

Member, Awards Committee, Computer Science Department, 1996.

Member, Graduate Curriculum Committee, Computer Science Department, 1995–1996.

Member, Computing Committee, Computer Science Department, 1988–1989, 1996.

Member, Executive Committee, CRICCS, 1992–1995.

Member, Board of Directors, ACSIOM, 1989–1995.

Member, Ad-hoc Committee to Restructure Graduate Program, 1992.

Laboratory Director for the COINS department research computing facility, 1978–1983, 1987–1988.

As part of this responsibility, I was actively involved in acquiring funds to build this laboratory into a modern state-of-the-art facility. In conjunction with Professor Edward Riseman, I secured for the department three National Science Foundation (NSF) equipment grants and three Digital Equipment Corporation corporate gifts totaling approximately \$2,000,000 for the years 1977–1982.

Member, Provost's Task Force on Computing, 1985–1986.

Co-Research Director, Northeast AI Consortium, 1985–1986.

Chair, Search Committee for New Computer Science Department Chairman, 1985.

Member, Admissions Committee, COINS, 1980–1982.

Member, Five College Committee on Computer Science Education, 1980–1982.

COINS Colloquium Program Director, 1978–1979.