

Curriculum Vitae

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1 Brief Resume

1.1 Education

- Ph.D. in Computer Sciences; University of Texas, Austin: 1993.
- M.S.C.S., with a minor in Philosophy (logic); University of Texas, Austin: 1988.
- B.Tech. in Computer Science & Engineering; Indian Institute of Technology, Delhi, India: 1986.

1.2 Professional Experience

- August 2003–present: Full Professor, Computer Science, North Carolina State University, Raleigh.
- August 2000–July 2003: Associate Professor with tenure, Computer Science, NCSU, Raleigh.
- August 1995–July 2000: Assistant Professor, Computer Science, NCSU, Raleigh.
- December 1992–July 1995: Member of the Technical Staff, MCC, Austin.
- January 1992–November 1992: Associate Member of the Technical Staff, MCC, Austin.
- June 1989–August 1990 and September 1991–December 1991: Graduate Research Assistant, MCC, Austin.
- September 1990–May 1991: Graduate Research Assistant, Center for Cognitive Science, University of Texas.
- Visiting Summer Appointments: SRI International, Menlo Park, CA: Summer 1986 and 1987; DFKI (German Research Center for Artificial Intelligence), Kaiserslautern, Germany: Summer 1991.

1.3 Membership in Professional Organizations

- Institute of Electrical and Electronics Engineers and its Computer Society: Fellow.
- Association for Computing Machinery (ACM).
- Association for the Advancement of Artificial Intelligence (AAAI).

1.4 Scholarly and Professional Honors

- Finalist for Best Senior Program Committee Member Award: 2011. Three out of 78 SPC members were named finalists.
- Fellow, Institute of Electrical and Electronics Engineers: 2009.
- Intel Research Council Faculty Award: 2007.
- IBM Partnership Award: 2007.

- Charter Member, Board of Directors, International Foundation for Autonomous Agents and Multiagent Systems (IFAAMAS): 2007–present.
- My paper [102] won the best student paper award at the *Third IEEE International Conference on Services Computing (SCC)*: 2006.
- My paper [123] was selected as a finalist for the Best Innovative System or Application Paper Award at the *Second International Joint Conference on Autonomous Agents and MultiAgent Systems*: 2003.
- Cisco University Research Grant: 2000.
- IBM Partnership Award: 2000.
- My paper [131] was selected as one of the best papers at the *Third International Conference on Multiagent Systems (ICMAS)*, Paris, July 1998, and was invited for submission to a journal special issue.
- IBM Partnership Award: 1998.
- Nominated for a Packard Fellowship as one of two candidates from NCSU: 1998.
- Outstanding Reviewer, International Joint Conference on Artificial Intelligence (IJCAI): 1997. Fewer than 10% of the reviewers were considered outstanding.
- IBM Partnership Award: 1997.
- National Science Foundation CAREER Award: 1996–2000.
- IBM Partnership Award: 1996.
- My paper [134] was selected as one of the best papers at *10th IEEE Conference on Artificial Intelligence for Applications (CAIA)*, and was invited for submission to a journal special issue.
- Nomination to the Harvard Society of Fellows: 1992. I did not pursue this nomination.
- Microelectronics and Computer Development Fellowship from the University of Texas at Austin: 1986–1988. This is the highest award offered by this University at the graduate level.
- Merit Prizes for the First Position in three of four semesters in Junior and Senior years at the Indian Institute of Technology.
- National Talent Search Scholarship of India: 1980–1986.
- Junior Science Talent Scholarship of Delhi Administration, Delhi, India: 1978–1980.
- Merit prize in the National Mathematics Olympiad of India: 1980.

2 Graduate Research Supervised

2.1 Doctoral Dissertations Supervised

I have graduated 16 Ph.D. students. Eleven of these have authored full papers appearing in AAMAS conference proceedings, which is the top conference in my primary area of specialization. Interestingly, one of my Ph.D. students (Pinar Yolum) has Ph.D. students who have also published in AAMAS.

Jie was hired by an IBM group in RTP. Bin is with Quantum Leap Innovations in Delaware. Pinar accepted a postdoctoral position at the Free University of Amsterdam, and is now a tenured associate professor at Boğaziçi University in Istanbul. Feng and Zhengang remain in North Carolina with SimpliCTI Technologies, where Feng is now Principal Architect. Michael moved to IBM Almaden Research Center as a research staff member. Ashok is with eBay. Soydan has joined Amazon. Nirmitt joined the IBM India Research Lab as a research staff member at its Bangalore campus. Qing is with Teradata. Yathi is with Cisco Systems. Amit is a post-doctoral fellow at the University of Trento. Yonghong is a post-doctoral fellow at Carnegie Mellon University. Christopher has founded a startup. Derek is an engineer with Google. Chung-Wei is continuing as a post-doctoral fellow in our department.

1. Chung-Wei Hang, *Probabilistic Trust Models for Social and Service Networks*, Spring 2011.
2. Derek J. Sollenberger, *Engineering Personal and Social Affective Applications*, Fall 2010.
3. Christopher J. Hazard, *Trust and Reputation in Multiagent Systems: Strategies and Dynamics with Reference to Electronic Commerce*, Spring 2010.
4. Yonghong Wang, *Evidence-Based Trust in Distributed Agent Systems*, Spring 2009.
5. Amit K. Chopra, *Commitment Alignment: Semantics, Patterns, and Decision Procedures for Distributed Computing*, Fall 2008.
6. Yathiraj B. Udupi, *Modeling Service Engagements in Dynamic Organizations: Multiagent Model and Architecture for Policy-Based Governance*, Spring 2008.
7. Qing Zhang, *Microdata Privacy Protection Through Permutation-Based Approaches*, coadvised with Dr. Ting Yu, Spring 2008.
8. Nirmitt V. Desai, *Interorganizational Business Interactions: Contracts, Processes, Evolution*, Fall 2007.
9. A. Soydan Bilgin, *Deriving Efficient SQL Sequences Via Prefetching*, coadvised with Dr. Rada Y. Chirkova, Fall 2007.
10. Zhengang Cheng, *Verifying Commitment-Based Business Protocols and their Compositions: Model Checking using Promela and Spin*, coadvised with Dr. Mladen A. Vouk, Summer 2006.
11. Ashok U. Mallya, *Modeling and Enacting Business Processes via Commitment Protocols Among Agents*, Fall 2005.
12. E. Michael Maximilien, *Toward Autonomic Web Services Trust and Selection*, Fall 2004.

13. Feng Wan, *Commitment-Based Business Process Modelling and Enactment*, Fall 2004.
14. Pinar Yolum, *Emergent Properties of Referral Networks*, Summer 2003.
15. Bin Yu, *Emergence and Evolution of Agent-Based Referral Networks*, Fall 2001.
16. Jie Xing, *Commitment-Based Interoperation for E-Commerce*, Summer 2001.

2.2 Masters Theses Supervised

Chubin was hired by Nortel, RTP; he now works for Unisys in Virginia. Anuj was hired by Ericsson, RTP; he now works for Motricity, Durham. Jiejun moved to Los Angeles. Sudhir works for Cisco, RTP. Mahadevan works for Microsoft. Pinar and Ashok continued on for a Ph.D. at NCSU. Mahmoud took up graduate studies in Pittsburgh to be closer to his wife. Wentao works in Atlanta. Paul works for Oak Ridge National Laboratory. Subhayu is with IBM, RTP and Raghuram with IBM, Bangalore. Soydan and Amit are continuing on for a Ph.D. at NCSU. Leena joined FedEx in Memphis. Payal joined IBM's Tivoli division in RTP. Arvind works for Cisco, San Jose. Narendran works for Symantec, Durham. Koushik is joining Epic Systems in Madison, Wisconsin.

1. Koushik Narayanan Rajagopalan, *Tools for Business Protocols*, Spring 2010.
2. Narendran Ranjit, *Multiagent Referral Systems through Social Networks*, Spring 2007.
3. Arvind Batalagundu Viswanathan, *Modeling Social Networks as Multiagent Systems*, Spring 2007.
4. Payal Chakravarty, *An Event-Driven Approach to Agent-Based Business Process Enactment*, Spring 2007.
5. Leena V. Wagle, *Incorporating Business Policies in Business Protocols*, Summer 2005.
6. Amit K. Chopra, *Nonmonotonic Commitment Machines*, Fall 2003.
7. A. Soydan Bilgin, *Semantic Web Services Query and Manipulation Language*, Summer 2003.
8. Srivatsa V. Chivukula, *Evolution of Trust in Anonymous Interactions*, Spring 2003.
9. Ashok U. Mallya, *Specifying and Resolving Temporal Commitments*, Fall 2002.
10. Raghuram M. Sreenath, *A Community-Based Rating System for Selecting among Web Services*, Fall 2002.
11. Subhayu S. Chatterjee, *Instant Messaging Interface and Transport for the Multiagent Referral System*, Fall 2002.
12. Paul J. Palathingal, *Integrating Information Retrieval in a Referral System for Knowledge Management*, Summer 2002.
13. Wentao Mo, *A Referral-Based Recommender System for E-Commerce*, Summer 2001.
14. Mahmoud S. Elhaddad, *Adaptive Multipath Traffic Allocation in TCP/IP Networks*, Summer 2001.

15. Pinar Yolum, *Flexible Execution of E-Commerce Protocols: A Commitment-Based Approach*, Summer 2000.
16. Mahadevan Venkatraman, *Specifying and Verifying Compliance with Commitment Protocols Among Autonomous Agents*, Summer 1999.
17. Sudhir K. Rustogi, *Empirical Studies of Coordination in Decentralized Multiagent Systems*, Summer 1999.
18. Anuj K. Jain, *Maintaining Process Coherence in Heterogeneous Information Environments*, Fall 1998.
19. Jiejun Kong, *Constructing Multiagent Systems: The MEP Project*, Summer 1998.
20. Chubin Lin, *Design and Implementation of a Distributed Workflow Scheduler*, Spring 1998.

2.3 Publications with Advisees

The following publications are coauthored with advisees.

- *Journals*: [36], [37], [39], [41], [42], [43], [44], [45], [24], [47], [46], [48], [49], [50], [51], [52], [53], [55], [56], [57], [58], [59], [60], [61], [62], [64], and [65].
- *Major conferences and symposia*: [79], [83], [84], [85], [86], [87], [88], [89], [90], [92], [93], [94], [95], [96], [97], [100], [101], [102], [103], [104], [105], [106], [107], [108], [109], [110], [111], [112], [113], [115], [116], [117], [118], [119], [121], [122], [123], [124], [125], [126], [127], [129], [143], [144], [145], and [146].
- *Other refereed conferences and symposia*: [17], [26], [27], [28], [159], [161], [162], [163], [164], [165], [166], [167], [168], [169], [170], [171], [172], [173], [174], [175], [177], [180], [181], [182], [183], [184], [185], [186], [187], [188], [189], [190], [192], [193], [194], [195], [197], [198], [199], [200], and [203].
- *Bulletin articles*: [236] and [237].
- *Miscellaneous external publications*: [239], [248], [249], [250], [251], [252], [253], [254], [255], [256], [257], [258], [259], and [260].

3 Publications

The publications listed below are single-authored, unless otherwise specified. Acceptance ratios are indicated where available; for a special issue, generally the ratio is for the issue. Final versions of all “in press” papers have been delivered.

3.1 Books

- [1] (Munindar P. Singh and Michael N. Huhns) *Service-Oriented Computing: Semantics, Processes, Agents*. John Wiley & Sons, Chichester. ISBN 0-470-09148-7. 2005.
- [2] (Munindar P. Singh, editor) *Practical Handbook of Internet Computing*. Chapman & Hall and CRC Press, Baton Rouge. ISBN 1-584-88381-2. 2005.
This handbook, which includes 56 contributed chapters, appears in the *Computer and Information Science Series* being edited by Professor Sartaj Sahni. Dr. Sahni invited me to edit this handbook.
- [3] (Michael N. Huhns and Munindar P. Singh, editors) *Readings in Agents*. Morgan Kaufmann, San Francisco, 1998. 523 + xv pages. ISBN 1-55860-495-2. Second printing, 1999.
- [4] (Munindar P. Singh) *Multiagent Systems: A Theoretical Framework for Intentions, Know-How, and Communications*. Lecture Notes in Artificial Intelligence, volume 799, Springer-Verlag, Heidelberg, 1994. 168 + xxiii pages. ISBN 0-387-58026-3. Subsumes papers [76], [218], [141], and [142], but mainly consists of previously unpublished results. This was among the first books dedicated to the subject of multiagent systems.

3.2 Edited Proceedings

- [5] (Rino Falcone, Suzanne Barber, Jordi Sabater-Mir, and Munindar P. Singh, editors) *Trust in Agent Societies*. Proceedings of the 11th International TRUST Workshop, Estoril, Portugal, May 12–13, 2008. Lecture Notes in Artificial Intelligence, volume 5396, Springer-Verlag, Berlin, 2008.
- [6] (Frank Dignum, Virginia Dignum, Sven Koenig, Sarit Kraus, Munindar P. Singh, and Michael Wooldridge, editors) *Proceedings of the 4th International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, ACM Press, 2005.
- [7] (Rino Falcone, Suzanne Barber, Jordi Sabater, and Munindar P. Singh, editors) *Trusting Agents for Trusting Electronic Societies*. Lecture Notes in Artificial Intelligence, volume 3577, Springer-Verlag, Berlin, 2005.
- [8] (Gianluca Moro, Claudio Sartori, and Munindar P. Singh, editors) *Agents and Peer-to-Peer Computing, Second International Workshop*. Lecture Notes in Artificial Intelligence, volume 2872, Springer-Verlag, Berlin, 2004. ISBN 3-540-24053-5.
- [9] (Rino Falcone, Suzanne Barber, Larry Korba, and Munindar P. Singh, editors) *Trust, Reputation, and Security: Theories and Practice*. Lecture Notes in Artificial Intelligence, volume 2631, Springer-Verlag, Berlin, 2003. ISBN 3-540-00988-4.

- [10] (Rino Falcone, Munindar P. Singh, and Yao-Hua Tan, editors) *Trust in Cyber-Societies: Integrating the Human and Artificial Perspectives*. Lecture Notes in Artificial Intelligence (State of the Art Survey), volume 2246, Springer-Verlag, Berlin, 2001. ISBN 3-540-43069-5.
- [11] (Jörg P. Müller, Munindar P. Singh, and Anand S. Rao, editors) *Intelligent Agents V: Proceedings of the 4th International Workshop on Agent Theories, Architectures, and Languages (ATAL)*. Lecture Notes in Artificial Intelligence, volume 1555, Springer-Verlag, Berlin, 1999. ISBN 3-540-65713-4.
- [12] (Munindar P. Singh, Anand S. Rao, and Michael J. Wooldridge, editors) *Intelligent Agents IV: Proceedings of the 4th International Workshop on Agent Theories, Architectures, and Languages (ATAL)*. Lecture Notes in Artificial Intelligence, volume 1365, Springer-Verlag, Berlin, 1998. ISBN 3-540-64162-9.
- [13] (Arbee L. P. Chen, Wolfgang Klas, and Munindar P. Singh, editors) *Proceedings of the 2nd IFCIS International Conference on Cooperative Information Systems (CoopIS)*. IEEE Computer Society Press, Los Alamitos, California, 1997. ISBN 0-8186-7946-8.

3.3 Invited Papers

I was an initial invitee for these papers. Papers for which I was not directly invited are listed under other categories.

Invited Book Chapters

- [14] (Amit K. Chopra and Munindar P. Singh), “Agent Communication.” In Gerhard Weiß (editor), *Multi-agent Systems: A Modern Approach to Distributed Artificial Intelligence*, MIT Press, 2012, chapter 3, pages 1–44. To appear.
- [15] (Munindar P. Singh) “Commitments in Multiagent Systems: Some History, Some Confusions, Some Controversies, Some Prospects.” In Fabio Paglieri, Luca Tummolini, Rino Falcone, and Maria Miceli (editors), *The Goals of Cognition. Essays in Honor of Cristiano Castelfranchi*, College Publications, London 2012, pages 1–29. To appear.
- [16] (Amal El Fallah-Seghrouchni, Jorge J. Gomez-Sanz, and Munindar P. Singh) “Formal Methods in Agent-Oriented Software Engineering.” In Marie-Pierre Gleizes and Jorge J. Gomez-Sanz (editors), *Proceedings of the International Workshop on Agent-Oriented Software Engineering*, Lecture Notes in Computer Science 6038, Springer-Verlag, Berlin, 2010, pages 213–228.
- [17] (Pankaj R. Telang and Munindar P. Singh) “Enhancing Tropos with Commitments: A Business Metamodel and Methodology.” In Alex Borgida, Vinay Chaudhri, Paolo Giorgini, and Eric Yu (editors), *Conceptual Modeling: Foundations and Applications*, Lecture Notes in Computer Science 5600, Springer-Verlag, Berlin, 2009, pages 417–435.
- [18] (Munindar P. Singh) “Agent-Based Abstractions for Software Development: Accommodating Complexity in Open Systems.” In Federico Bergenti, Marie-Pierre Gleizes, and Franco Zambonelli (editors), *Methodologies and Software Engineering for Agent Systems: The Handbook of Agent-Oriented Software Engineering*, chapter 1, Kluwer, 2004.

- [19] (Munindar P. Singh) “The Future of Agent Communications.” In Marc-Philippe Huget (editor), *Communication in Multiagent Systems*, Lecture Notes in Artificial Intelligence 2650, Springer-Verlag, Berlin, 2003, pages 318–322.
- [20] (Munindar P. Singh and Michael N. Huhns) “Social Abstractions for Information Agents.” In Matthias Klusch (editor), *Intelligent Information Agents: Agent-Based Information Discovery and Management on the Internet*, Springer-Verlag, Berlin, 1999, chapter 2, pages 37–52.
- [21] (Munindar P. Singh and Mladen A. Vouk) “Network Computing.” In John G. Webster (editor), *Encyclopedia of Electrical and Electronics Engineering*, volume 14 (Mu–Nu), John Wiley & Sons, New York, 1999, pages 114–132.
- [22] (Munindar P. Singh, Anand S. Rao, and Michael P. Georgeff), “Formal Methods in DAI: Logic-Based Representation and Reasoning.” In Gerhard Weiß (editor), *Multiagent Systems: A Modern Approach to Distributed Artificial Intelligence*, MIT Press, 1999, chapter 8, pages 331–376.
- [23] (Munindar P. Singh) “Know-How.” In Anand S. Rao and Michael J. Wooldridge (editors), *Foundations of Rational Agency*, Applied Logic Series, Kluwer, 1999, pages 105–132.

Invited Journal Articles

- [24] (Feng Wan and Munindar P. Singh) “Enabling Persistent Web Services with Commitments.” *Information Technology and Management*, 6(1), January 2005, pages 41–60.
- [25] (Munindar P. Singh and Michael N. Huhns) “Multiagent Systems for Workflow.” *International Journal of Intelligent Systems in Accounting, Finance & Management*, volume 8, 1999, pages 105–117.

Invited Proceedings Articles

- [26] (Amit K. Chopra, Nir Oren, Sanjay Modgil, Nirmal Desai, Simon Miles, Michael Luck, and Munindar P. Singh) “Analyzing Contract Robustness through a Model of Commitments.” *Proceedings of the 11th AAMAS International Workshop on Agent Oriented Software Engineering (AOSE)*, May 2010, pages 1–21, Springer.
- [27] (Amit K. Chopra and Munindar P. Singh) “Interoperation in Protocol Enactment.” *Proceedings of the 5th AAMAS Workshop on Declarative Agent Languages and Technologies (DALT)*, Honolulu, May 2007, LNAI 4897, pages 36–49, Springer.
- [28] (Amit K. Chopra and Munindar P. Singh) “Producing Compliant Interactions: Conformance, Coverage, and Interoperability.” *Proceedings of the 3rd AAMAS Workshop on Declarative Agent Languages and Technologies (DALT)*, Hakodate, Japan, May 2006, LNAI 4327, pages 1–15, Springer.
- [29] (Munindar P. Singh) “The Pragmatic Web: Preliminary Thoughts.” In *Proceedings of the NSF-OntoWeb Workshop on Database and Information Systems Research for Semantic Web and Enterprises*, Amicalola State Park, Georgia, April 2002, pages 82–90.
- [30] (Munindar P. Singh) “Communication as Agent Interaction: Toward a Public Semantics.” In *Preproceedings of the 3rd Workshop on the Semantics and Pragmatics of Dialogue (Amstelogue)*, Amsterdam, May 1999.

- [31] (Mona Singh and Munindar P. Singh) “Applying Mixed-Initiative Interaction in User Interfaces for Communicators.” *Proceedings of the AAAI Workshop on Mixed-Initiative Intelligence*, Orlando, July 1999.
- [32] (Munindar P. Singh) “Conceptual Modeling for Multiagent Systems: Applying Interaction-Oriented Programming.” In Peter P. Chen, Jacky Akoka, Hannu Kangassalo, and Bernhard Thalheim (editors), *Conceptual Modeling: Current Issues and Future Directions (Selected Papers from the Workshop on Conceptual Modeling)*, Lecture Notes in Computer Science, volume 1565, Springer-Verlag, Berlin, 1999, pages 195–210.
- [33] (Michael N. Huhns and Munindar P. Singh) “Multiagent Systems in Information-Rich Environments.” In *Proceedings of the 2nd International Workshop on Cooperative Information Agents: Learning, Mobility and Electronic Commerce for Information Discovery on the Internet (CIA)*, Springer-Verlag, Berlin, 1998, pages 79–93.
- [34] (Munindar P. Singh and Michael N. Huhns) “Challenges for Machine Learning in Cooperative Information Systems.” In Gerhard Weiß (editor), *Distributed Artificial Intelligence Meets Machine Learning: Learning in Multi-Agent Environments*, Lecture Notes in Artificial Intelligence, volume 1221, Springer-Verlag, Berlin, 1997, pages 11–24.
- [35] (Munindar P. Singh) “Commitments in the Architecture of a Limited, Rational Agent.” In Lawrence Cavedon, Wayne Wobcke, and Anand Rao (editors), *Intelligent Agent Systems: Theoretical and Practical Issues*, Lecture Notes in Artificial Intelligence, volume 1209, Springer-Verlag, Berlin, 1997, pages 72–87. Subsumes [140] and [220].

3.4 Journal Articles

Some of the publications listed in Section 3.3 are also journal articles.

- [36] (Chung-Wei Hang and Munindar P. Singh) “Generalized Framework for Personalized Recommendations in Agent Networks.” *Autonomous Agents and Multi-Agent Systems*, special issue on Agents and Data Mining, volume xx, 2012, pages 1–27. In press.

Published by Springer (formerly Kluwer) since 1998, *Autonomous Agents and Multi-Agent Systems* is the premier journal for research into agents and multiagent systems. It has rapidly acquired a great deal of prestige in the research community.

- [37] (Pradeep K. Murukannaiah and Munindar P. Singh) “Platys Social: Relating Shared Places and Private Social Circles.” *IEEE Internet Computing*, volume 16. In press.

IEEE Internet Computing is the most widely circulated publication dealing with Internet technologies. Its 2006 impact factor according to Journal Citation Reports puts it in the top 5% of all software engineering publications.

- [38] (Frances Brazier, Virginia Dignum, Michael N. Huhns, Christian Derksen, Frank Dignum, Tim Lessner, Julian Padget, Thomas Quillinan, and Munindar P. Singh) “Agent-Based Organisational Governance of Services.” *Multiagent and Grid Systems: An International Journal (MAGS)*, 2011. In press.

- [39] (Scott N. Gerard and Munindar P. Singh) “Formalizing and Verifying Protocol Refinements.” *ACM Transactions on Intelligent Systems and Technology (TIST)*, 2011, pages 1–28; appendix 1–7. In press.

ACM Transactions on Intelligent Systems and Technology is a leading publication in the area of intelligent systems.

- [40] (Amit K. Chopra, Alexander Artikis, Jamal Bentahar, Marco Colombetti, Frank Dignum, Nicoletta Fornara, Andrew J. I. Jones, Munindar P. Singh, and Pinar Yolum) “Research Directions in Agent Communication.” *ACM Transactions on Intelligent Systems and Technology TIST*, 2011, pages 1–26. In press.

- [41] (Yonghong Wang, Chung-Wei Hang, and Munindar P. Singh) “A Probabilistic Approach for Maintaining Trust Based on Evidence.” *Journal of Artificial Intelligence Research (JAIR)*, volume 40, January 2011, pages 221–267.

Journal of Artificial Intelligence Research is one of the top two leading publications on artificial intelligence.

- [42] (Pankaj R. Telang and Munindar P. Singh) “Specifying and Verifying Cross-Organizational Business Models: An Agent-Oriented Approach.” *IEEE Transactions on Services Computing*, 2011, pages 1–14, appendix 1–5. In press.

IEEE Transactions on Services Computing is a leading publication in the area of service-oriented computing.

- [43] (Xibin Gao, Munindar P. Singh, and Pankaj Mehra) “Mining Business Contracts for Service Exceptions.” *IEEE Transactions on Services Computing*, 2011, pages 1–13. In press.

- [44] (Derek J. Sollenberger and Munindar P. Singh) “Koko: An Architecture for Affect-Aware Games.” *Autonomous Agents and Multi-Agent Systems*, special issue on Agent Communication, volume 18, 2011, pages 1–32. In press.

- [45] (Chung-Wei Hang and Munindar P. Singh) “Trustworthy Service Selection and Composition.” *ACM Transactions on Autonomous and Adaptive Systems (TAAS)*, volume 6, number 1, February 2011, pages 5:1–5:17.

ACM Transactions on Autonomous and Adaptive Systems is a leading publication on adaptive systems in computer science.

- [46] (Christopher J. Hazard and Munindar P. Singh) “Intertemporal Discount Factors as a Measure of Trustworthiness in Electronic Commerce.” *IEEE Transactions on Knowledge and Data Engineering*, volume 23, number 5, May 2011, pages 699–712.

IEEE Transactions on Knowledge and Data Engineering is the leading publication covering topics at the interface of artificial intelligence and databases.

- [47] (Yonghong Wang and Munindar P. Singh) “Evidence-Based Trust: A Mathematical Model Geared for Multiagent Systems.” *ACM Transactions on Autonomous and Adaptive Systems (TAAS)*, volume 5, number 4, November 2010, pages 14:1–14:28.

- [48] (Munindar P. Singh, Amit K. Chopra, and Nirmitt Desai) “Commitment-Based SOA.” *IEEE Computer*, volume 42, number 11, November 2009, pages 72–79.

IEEE Computer is one of the two widest circulating peer-reviewed publications in computer science. Like CACM, it is professionally copy edited, which improves its appeal to a wide readership.

- [49] (Nirmitt Desai, Amit K. Chopra, and Munindar P. Singh) “Amoeba: A Methodology for Modeling and Evolution of Cross-Organizational Business Processes.” *ACM Transactions on Software Engineering and Methodology (TOSEM)*, volume 19, number 2, article 6, October 2009, pages 1–45.

ACM Transactions on Software Engineering and Methodology is a leading publication in software engineering, and one of the most influential forums for computer science research.

- [50] (Payal Chakravarty and Munindar P. Singh) “Incorporating Events into Cross-Organizational Business Processes.” *IEEE Internet Computing*, volume 12, number 2, March-April 2008, pages 46–53.

- [51] (Ashok U. Mallya and Munindar P. Singh) “An Algebra for Commitment Protocols.” *Autonomous Agents and Multi-Agent Systems*, special issue on Agent Communication, volume 14, number 2, April 2007, pages 143–163. Acceptance ratio: 15.3%.

- [52] (Nirmitt Desai, Ashok U. Mallya, Amit K. Chopra, and Munindar P. Singh) “Interaction Protocols as Design Abstractions for Business Processes.” *IEEE Transactions on Software Engineering*, volume 31, number 12, December 2005, pages 1015–1027. Acceptance ratio: 12.5%.

IEEE Transactions on Software Engineering is a preeminent publication in software engineering, and is widely considered one of the most influential forums for computer science research.

- [53] (Pinar Yolum and Munindar P. Singh) “Engineering Self-Organizing Referral Networks for Trustworthy Service Selection.” *IEEE Transactions on System, Man, and Cybernetics, Part A*, volume 35, number 3, May 2005, pages 396–407. Acceptance ratio: 35.7%.

Published by the IEEE System, Man, and Cybernetics Society, this transactions is a leading venue for research into the system aspects of computing, including multiagent systems and the Web.

- [54] (Michael N. Huhns and Munindar P. Singh) “Service-Oriented Computing: Key Concepts and Principles.” *IEEE Internet Computing*, volume 9, number 1, January-February 2005, pages 75–81.

- [55] (E. Michael Maximilien and Munindar P. Singh) “A Framework and Ontology for Dynamic Web Services Selection.” *IEEE Internet Computing*, volume 8, number 5, September-October 2004, pages 84–93.

- [56] (Raghuram M. Sreenath and Munindar P. Singh) “Agent-Based Service Selection.” *Journal of Web Semantics*, volume 1, number 3, April 2004, pages 261–279.

Published by Elsevier, *Web Semantics* is a new journal dealing with representing and reasoning with the Web in semantic terms.

- [57] (Pinar Yolum and Munindar P. Singh) “Dynamic Communities in Referral Networks.” *Web Intelligence and Agent Systems*, volume 1, number 2, 2003, pages 105–116.

Published by the Web Intelligence Consortium, *Web Intelligence and Agent Systems* is a new journal dealing with the application of artificial intelligence and related bodies of knowledge to extract knowledge from and build intelligence on the Web.

- [58] (Pinar Yolum and Munindar P. Singh) “Reasoning About Commitments in the Event Calculus: An Approach for Specifying and Executing Protocols.” *Annals of Mathematics and Artificial Intelligence*, Special Issue on *Computational Logic in Multi-Agent Systems*, volume 42, numbers 1-3, 2004, pages 227–253.

Published by Kluwer, *Annals of Mathematics and Artificial Intelligence* is a well-regarded publication dealing with theoretical and mathematical aspects of artificial intelligence and multiagent systems.

- [59] (Bin Yu, Mahadevan Venkatraman, and Munindar P. Singh) “An Adaptive Social Network for Information Access: Architecture and Experimental Results.” *Applied Artificial Intelligence*, volume 17, number 1, January 2003, pages 21–38.

Published by Taylor & Francis, *Applied Artificial Intelligence* is the principal journal for research into applied artificial intelligence, covering applications as well as the principles underlying them.

- [60] (Bin Yu and Munindar P. Singh) “Distributed Reputation Management for Electronic Commerce.” *Computational Intelligence*, volume 18, number 4, November 2002, pages 535–549.

Computational Intelligence is one of the highest rated journals dealing with the broad area of artificial intelligence. It was founded by the National Research Council of Canada (NRCC), and is currently published by Basil Blackwell under the sponsorship of the Canadian Society for Computational Studies of Intelligence (CSCSI).

- [61] (Jie Xing, Feng Wan, Sudhir K. Rustogi, and Munindar P. Singh) “A Commitment-Based Approach for Business Process Interoperation.” *IEICE Transactions on Information and Systems*, volume E84-D, number 10, October 2001, pages 1324–1332, *IEICE-IEEE Joint Special Section on Autonomous Decentralized Systems*. Subsumes [193].

IEICE is the Institute of Information and Communication Engineers, which is based in Japan. It is one of the oldest professional engineering associations in the world.

The *IEICE Transactions on Information and Systems* is perhaps the leading peer-reviewed publication in computer science in all of Asia and Oceania. This article appeared in a special IEICE-IEEE joint special issue on *Autonomous Decentralized Systems and Systems Assurance*.

- [62] (Munindar P. Singh, Bin Yu, and Mahadevan Venkatraman) “Community-Based Service Location.” *Communications of the ACM*, volume 44, number 4, April 2001, pages 49–54.

Communications of the ACM is one of the two widest circulating peer-reviewed publications in computer science. It is also professionally copy edited, which improves its appeal to a wide readership.

- [63] (Munindar P. Singh) “Synthesizing Coordination Requirements for Heterogeneous Autonomous Agents.” *Autonomous Agents and Multi-Agent Systems*, volume 3, number 2, June 2000, pages 107–132.

Described above.

- [64] (Mahadevan Venkatraman and Munindar P. Singh) “Verifying Compliance with Commitment Protocols: Enabling Open Web-Based Multiagent Systems.” *Autonomous Agents and Multi-Agent Systems*, volume 2, number 3, September 1999, pages 217–236.

Described above.

- [65] (Anuj K. Jain, Manuel Aparicio IV, and Munindar P. Singh) “Agents for Process Coherence in Virtual Enterprises.” *Communications of the ACM*, volume 42, number 3, March 1999, pages 62–69.

Described above.

- [66] (Munindar P. Singh) “Agent Communication Languages: Rethinking the Principles.” *IEEE Computer*, volume 31, number 12, December 1998, pages 40–47.

This article was reprinted as a crucial paper in Marc-Philippe Huet, editor, *Communication in Multiagent Systems*, Lecture Notes in Artificial Intelligence 2650, Springer-Verlag, Berlin, 2003, pages 37–50.

- [67] (Michael N. Huhns and Munindar P. Singh) “A Multiagent Treatment of Agenthood.” *Applied Artificial Intelligence*, volume 13, numbers 1–2, January-March 1999, pages 3–10. Subsumes [305].

Described above.

- [68] (Munindar P. Singh) “Applying the Mu-Calculus in Planning and Reasoning about Action.” *Journal of Logic and Computation*, volume 8, number 3, June 1998, pages 425–445. Subsumes [214].

Published by Oxford University Press, *Journal of Logic and Computation* is a leading publication for topics at the intersection of mathematical logic and computer science. These topics include formal studies of agents and multiagent systems.

- [69] (Munindar P. Singh) “An Ontology for Commitments in Multiagent Systems: Toward a Unification of Normative Concepts.” *Artificial Intelligence and Law*, volume 7, 1999, pages 97–113. Subsumes [205].

Published by Kluwer under the auspices of the International Association for Artificial Intelligence and Law (IAAIL), *Artificial Intelligence and Law* focuses on innovative theoretical and systems research at the intersection of artificial intelligence and law.

- [70] (Munindar P. Singh) “Semantical Considerations on Intention Dynamics for BDI Agents.” *Journal of Experimental and Theoretical Artificial Intelligence*, volume 10, number 4, October-December 1998, pages 551–564.

Published by Taylor & Francis, *Journal of Experimental and Theoretical Artificial Intelligence* is considered an important forum for publishing results on conceptual developments in artificial intelligence.

- [71] (Munindar P. Singh) “Toward a Model Theory of Actions: How Agents do it in Branching Time.” *Computational Intelligence*, volume 14, number 3, August 1998, pages 287–317. Subsumes [149].

Described above.

- [72] (Munindar P. Singh, Philip E. Cannata, Michael N. Huhns, Nigel Jacobs, Tomasz Ksiezzyk, Kayliang Ong, Amit P. Sheth, Christine Tomlinson, and Darrell Woelk) “The Carnot Heterogeneous Database Project: Implemented Applications.” *Distributed and Parallel Databases*, volume 5, number 2, April 1997, pages 207–225. Acceptance ratio: 17%.

Published by Kluwer, *Distributed and Parallel Databases* covers topics in the technical aspects of modern information systems, including interoperation of large-scale heterogeneous databases.

- [73] (Paul C. Attie, Munindar P. Singh, E. Allen Emerson, Amit Sheth, and Marek Rusinkiewicz) “Scheduling Workflows by Enforcing Intertask Dependencies.” *Distributed Systems Engineering Journal*, volume 3, number 4, December 1996, pages 222–238. Acceptance ratio: 25%. Subsumes [135].

Published under the auspices of the British Computer Society and the Institute of Electrical Engineers, *Distributed Systems Engineering Journal* covers the systems aspects of distributed computing.

- [74] (Munindar P. Singh and Michael N. Huhns) “Automating Workflows for Service Order Processing: Integrating AI and Database Technologies.” *IEEE Expert: Intelligent Systems & Their Applications*, volume 9, number 5, October 1994, pages 19–23. Subsumes [134].

Now named *IEEE Intelligent Systems*, this is a refereed, archival magazine that covers the leading-edge practice of artificial intelligence. As a magazine, it is copy edited by a professional staff, which improves its appeal to a wide audience. Its circulation is substantially greater than most conventional journals.

- [75] (Munindar P. Singh and Nicholas M. Asher) “A Logic of Intentions and Beliefs.” *Journal of Philosophical Logic*, volume 22, number 5, October 1993, pages 513–544. Acceptance ratio: 18%. Subsumes [223].

Published by Kluwer under the auspices of the Association for Symbolic Logic, *Journal of Philosophical Logic* is the leading publication for logical theories for representation and reasoning. Its scope includes theoretical work on artificial intelligence.

- [76] (Munindar P. Singh) “A Semantics for Speech Acts.” *Annals of Mathematics and Artificial Intelligence*, volume 8, number I-II, 1993, pages 47–71. Subsumes [221] and [139].

- [77] (Munindar P. Singh, Michael N. Huhns, and Larry M. Stephens) “Declarative Representations of Multiagent Systems.” *IEEE Transactions on Knowledge and Data Engineering*, volume 5, number 5, October 1993, pages 721–739. Acceptance ratio: 30%.

3.5 Papers in Major Conference Proceedings

The following are papers in major refereed conferences, mostly with acceptance ratios of about 30% or better.

- [78] (Munindar P. Singh) “LoST: Local State Transfer—An Architectural Style for the Distributed Enactment of Business Protocols.” *Proceedings of the 9th International Conference on Web Services (ICWS)*, Washington, DC, IEEE Press, July 2011, pages 57–64. Acceptance ratio: 13.7%.
- [79] (Amit K. Chopra and Munindar P. Singh) “Specifying and Applying Commitment-Based Business Patterns.” *Proceedings of the 10th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Taipei, May 2011, pages 475–482. Acceptance ratio: 22.1%.
- [80] (Munindar P. Singh) “Trust as Dependence: A Logical Approach.” *Proceedings of the 10th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Taipei, May 2011, pages 863–870. Acceptance ratio: 22.1%.
- [81] (Munindar P. Singh) “Information-Driven Interaction-Oriented Programming: BSPL, the Blindingly Simple Protocol Language.” *Proceedings of the 10th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Taipei, May 2011, pages 491–498. Acceptance ratio: 22.1%.
- [82] (Elisa Marengo, Matteo Baldoni, Amit K. Chopra, Cristina Baroglio, Viviana Patti, and Munindar P. Singh) “Commitments with Regulations: Reasoning about Safety and Control in REGULA.” *Proceedings of the 10th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Taipei, May 2011, pages 467–474. Acceptance ratio: 22.1%.
- [83] (Derek J. Sollenberger and Munindar P. Singh) “Kokomo: An empirically evaluated methodology for affective applications.” *Proceedings of the 10th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Taipei, May 2011, pages 293–300. Acceptance ratio: 22.1%.
- [84] (Pankaj R. Telang and Munindar P. Singh) “Abstracting and Applying Business Modeling Patterns from RosettaNet.” *Proceedings of the 8th International Conference on Service Oriented Computing (ICSOC)*, San Francisco, December 2010, pages 426–440. Acceptance ratio: 15.4%.
- [85] (Adel ElMessiry, Xibin Gao, and Munindar P. Singh) “Incorporating Expectations as a Basis for Service Selection.” *Proceedings of the 8th International Conference on Service Oriented Computing (ICSOC)*, San Francisco, December 2010, pages 486–500. Acceptance ratio: 15.4%.
- [86] (Chung-Wei Hang and Munindar P. Singh) “From Quality to Utility: Adaptive Service Selection Framework.” *Proceedings of the 8th International Conference on Service Oriented Computing (ICSOC)*, San Francisco, December 2010, pages 456–470. Acceptance ratio: 15.4%.
- [87] (Chung-Wei Hang, Yonghong Wang, and Munindar P. Singh) “Operators for Propagating Trust and their Evaluation in Social Networks.” *Proceedings of the 8th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Budapest, May 2009, pages 1025–1032. Acceptance ratio: 22.3%.

- [88] (Amit K. Chopra and Munindar P. Singh) “Multiagent Commitment Alignment.” *Proceedings of the 8th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Budapest, May 2009, pages 937–944. Acceptance ratio: 22.3%.
- [89] (Matteo Baldoni, Cristina Baroglio, Amit K. Chopra, Nirmitt Desai, Viviana Patti, and Munindar P. Singh) “Choice, Interoperability, and Conformance in Interaction Protocols and Service Choreographies.” *Proceedings of the 8th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Budapest, May 2009, pages 843–850. Acceptance ratio: 22.3%.
- [90] (Nirmitt Desai and Munindar P. Singh) “On the Enactability of Business Protocol Specifications.” *Proceedings of the 23rd Conference on Artificial Intelligence (AAAI)*, Chicago, AAAI Press, July 2008, pages 1126–1131. Acceptance ratio: 24.2%.
- [91] (Munindar P. Singh) “Semantical Considerations on Dialectical and Practical Commitments.” *Proceedings of the 23rd Conference on Artificial Intelligence (AAAI)*, Chicago, AAAI Press, July 2008, pages 176–181. Acceptance ratio: 24.2%.
- [92] (Amit K. Chopra and Munindar P. Singh) “Constitutive Interoperability.” *Proceedings of the 7th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Estoril, Portugal, May 2008, pages 797–804. Acceptance ratio: 22.2%.
- [93] (Nirmitt Desai, Nanjangud C. Narendra, and Munindar P. Singh) “Checking Correctness of Business Contracts via Commitments.” *Proceedings of the 7th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Estoril, Portugal, May 2008, pages 787–794. Acceptance ratio: 22.2%.
- [94] (Yathiraj B. Udupi and Munindar P. Singh) “Governance of Cross-Organizational Service Agreements: A Policy-Based Approach.” *Proceedings of the 4th IEEE International Conference on Services Computing (SCC)*, Research Track, Salt Lake City, IEEE Press, July 2007, pages 36–43. Acceptance ratio: 20%.
- [95] (Nirmitt Desai, Amit K. Chopra, Matthew Arrott, Bill Specht, and Munindar P. Singh) “Engineering Foreign Exchange Processes via Commitment Protocols.” *Proceedings of the 4th IEEE International Conference on Services Computing (SCC)*, Application and Industry Track, Salt Lake City, IEEE Press, July 2007, pages 514–521. Acceptance ratio: 25%.
- [96] (Nirmitt Desai and Munindar P. Singh) “A Modular Action Description Language for Protocol Composition.” *Proceedings of the 22nd Conference on Artificial Intelligence (AAAI)*, Vancouver, AAAI Press, July 2007, pages 962–967. Acceptance ratio: 27.5%.
- [97] (Nirmitt Desai, Amit K. Chopra, and Munindar P. Singh) “Representing and Reasoning About Commitments in Business Processes.” *Proceedings of the 22nd Conference on Artificial Intelligence (AAAI)*, Vancouver, AAAI Press, July 2007, pages 1328–1333. Acceptance ratio: 27.5%.
- [98] (Pinar Yolum and Munindar P. Singh) “Enacting Protocols by Commitment Concession.” *Proceedings of the 6th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Hawaii, May 2007, pages 116–123. Acceptance ratio: 23%.

- [99] (Munindar P. Singh) “Formalizing Communication Protocols for Multiagent Systems.” *Proceedings of the 20th International Joint Conference on Artificial Intelligence (IJCAI)*, Hyderabad, India, January 2007, pages 1519–1524. Full paper with oral presentation. Acceptance ratio: 15.7%.
- [100] (Yonghong Wang and Munindar P. Singh) “Formal Trust Model for Multiagent Systems.” *Proceedings of the 20th International Joint Conference on Artificial Intelligence (IJCAI)*, Hyderabad, India, January 2007, pages 1551–1556. Full paper. Acceptance ratio: 34.7%.
- [101] (Yathiraj B. Udupi and Munindar P. Singh) “Multiagent Policy Architecture for Virtual Business Organizations.” *Proceedings of the 3rd IEEE International Conference on Services Computing (SCC)*, Chicago, IEEE Press, September 2006, pages 44–51. Acceptance ratio: 25%.
- [102] (Nirmit Desai, Amit K. Chopra, and Munindar P. Singh) “Business Process Adaptations via Protocols.” *Proceedings of the 3rd IEEE International Conference on Services Computing (SCC)*, Chicago, IEEE Press, September 2006, pages 103–110. Acceptance ratio: 25%. **Best Student Paper Award.**
- [103] (Yonghong Wang and Munindar P. Singh) “Trust Representation and Aggregation in a Distributed Agent System.” *Proceedings of the 21st National Conference on Artificial Intelligence (AAAI)*, selected for oral presentation. Boston, AAAI Press, July 2006, pages 1425–1430. Acceptance ratio: 22.1%.
- [104] (Yathiraj B. Udupi and Munindar P. Singh) “Contract Enactment in Virtual Organizations: A Commitment-Based Approach.” *Proceedings of the 21st National Conference on Artificial Intelligence (AAAI)*, Boston, AAAI Press, July 2006, pages 722–727. Acceptance ratio: 30.5%.
- [105] (Ashok U. Mallya and Munindar P. Singh) “Specifying and Resolving Preferences Among Agent Interaction Patterns.” *Proceedings of the 5th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Hakodate, Japan, ACM Press, May 2006, pages 1361–1368. Acceptance ratio: 23.1%.
- [106] (Amit K. Chopra and Munindar P. Singh) “Contextualizing Commitment Protocols.” *Proceedings of the 5th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Hakodate, Japan, ACM Press, May 2006, pages 1345–1352. Acceptance ratio: 23.1%.
- [107] (E. Michael Maximilien and Munindar P. Singh) “Toward Web Services Interaction Styles.” *Proceedings of 2nd IEEE International Conference on Services Computing (SCC)*, July 2005, Orlando, pages 147–154. Acceptance ratio: 18.8%.
- [108] (Ashok U. Mallya and Munindar P. Singh) “Modeling Exceptions in Commitment Protocols.” *Proceedings of the 4th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Amsterdam, ACM Press, July 2005, pages 122–129. Acceptance ratio: 24.5%.
- [109] (E. Michael Maximilien and Munindar P. Singh) “Agent-Based Trust Model Involving Multiple Qualities.” *Proceedings of the 4th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Amsterdam, ACM Press, July 2005, pages 519–526. Acceptance ratio: 24.5%.
- [110] (Feng Wan and Munindar P. Singh) “Formalizing and Achieving Multiparty Agreements via Commitments.” *Proceedings of the 4th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Amsterdam, ACM Press, July 2005, pages 770–777. Acceptance ratio: 24.5%.

- [111] (E. Michael Maximilien and Munindar P. Singh) “Toward Autonomic Web Services Trust and Selection.” *Proceedings of the 2nd International Conference on Service Oriented Computing (ICSOC)*, New York, November 2004, pages 212–221. Acceptance ratio: 20.1%.
- [112] (Amit K. Chopra, Nirmitt V. Desai, Ashok U. Mallya, Leena V. Wagle, and Munindar P. Singh) “A Semantic Protocol-Based Approach for Developing Business Processes.” *Forum Proceedings of the 2nd International Conference on Service Oriented Computing (ICSOC)*, New York, November 2004, pages 99–107. Acceptance ratio: 31.1%.
- [113] (Pinar Yolum and Munindar P. Singh) “Service Graphs for Building Trust.” *Proceedings of the 12th International Conference on Cooperative Information Systems (CoopIS)*, Agia Napa, Cyprus, October 2004, Lecture Notes in Computer Science 3290, Springer-Verlag, pages 509–525. Acceptance ratio: 25.4%.
- [114] (Bin Yu, Katia Sycara, and Munindar P. Singh) “Developing Trust in Large-Scale Peer-to-Peer Systems.” *Proceedings of First IEEE Symposium on Multi-Agent Security and Survivability*, IEEE Press, August 2004, pages 1-10. Acceptance ratio: 30%.
- [115] (Munindar P. Singh, Amit K. Chopra, Nirmitt V. Desai, and Ashok U. Mallya) “Protocols for Processes: Programming in the Large for Open Systems.” *Proceedings of the 19th Annual ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, Vancouver, October 2004, *SIGPLAN Notices*, volume 39, number 12, December 2004, pages 73–83. Acceptance ratio: 33.3%.
- [116] (A. Soydan Bilgin, Rada Y. Chirkova, Timo J. Salo, and Munindar P. Singh) “Deriving Efficient SQL Sequences via Read-Aheads.” *Proceedings of the 6th International Conference on Data Warehousing and Knowledge Discovery (DaWaK)*, Zaragoza, Spain, September 2004, Lecture Notes in Computer Science 3181, Springer-Verlag, pages 299–308. Acceptance ratio: 24%.
- [117] (Nirmitt V. Desai and Munindar P. Singh) “Protocol-Based Business Process Modeling and Enactment.” *Proceedings of the 2nd International Conference on Web Services (ICWS)*, San Diego, IEEE Press, July 2004, pages 35–42. Acceptance ratio: 28.7%.
- [118] (A. Soydan Bilgin and Munindar P. Singh) “A DAML-Based Repository for QoS-Aware Semantic Web Service Selection.” *Proceedings of the 2nd International Conference on Web Services (ICWS)*, San Diego, IEEE Press, July 2004, pages 368–375. Acceptance ratio: 28.7%.
- [119] (Feng Wan and Munindar P. Singh) “Mapping Dooley Graphs and Commitment Causality to the Pi-Calculus.” *Proceedings of the 3rd International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, New York, IEEE Press, July 2004, pages 412–419. Acceptance ratio: 24%.
- [120] (Munindar P. Singh) “Distributed Enactment of Multiagent Workflows.” *Proceedings of the 2nd International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Melbourne, ACM Press, July 2003, pages 907–914. Acceptance ratio: 24.7%.
- [121] (Bin Yu and Munindar P. Singh) “Searching Social Networks.” *Proceedings of the 2nd International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Melbourne, ACM Press, July 2003, pages 65–72. Acceptance ratio: 24.7%.

- [122] (Bin Yu and Munindar P. Singh) “Detecting Deception in Reputation Management.” *Proceedings of the 2nd International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Melbourne, ACM Press, July 2003, pages 73–80. Acceptance ratio: 24.7%.
- [123] (Feng Wan and Munindar P. Singh) “Commitments and Causality for Multiagent Design.” *Proceedings of the 2nd International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Melbourne, ACM Press, July 2003, pages 749–756. Acceptance ratio: 24.7%.
- [124] (Pinar Yolum and Munindar P. Singh) “Emergent Properties of Referral Systems.” *Proceedings of the 2nd International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Melbourne, ACM Press, July 2003, pages 592–599. Acceptance ratio: 24.7%.
- [125] (Jie Xing and Munindar P. Singh) “Engineering Commitment-Based Multiagent Systems: A Temporal Logic Approach.” *Proceedings of the 2nd International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Melbourne, ACM Press, July 2003, pages 891–898. Acceptance ratio: 24.7%.
- [126] (Pinar Yolum and Munindar P. Singh) “Flexible Protocol Specification and Execution: Applying Event Calculus Planning using Commitments.” *Proceedings of the 1st International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Bologna, ACM Press, July 2002, pages 527–534. Acceptance ratio: 26%.
- [127] (Bin Yu and Munindar P. Singh) “An Evidential Model of Distributed Reputation Management.” *Proceedings of the 1st International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Bologna, ACM Press, July 2002, pages 294–301. Acceptance ratio: 26%.
- [128] (Mona Singh, Anuj K. Jain, and Munindar P. Singh) “E-Commerce over Communicators: Challenges and Solutions for User Interfaces.” *Proceedings of the 1st ACM Conference on Electronic Commerce (EC)*, Denver, November 1999, pages 177–186. Acceptance ratio: 29%.
- [129] (Sudhir K. Rustogi and Munindar P. Singh) “Be Patient and Tolerate Imprecision: How Autonomous Agents can Coordinate Effectively.” *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, Stockholm, August 1999, pages 512–517. Acceptance ratio: 25.9%.
- [130] (Munindar P. Singh) “The Intentions of Teams: Team Structure, Endodeixis, and Exodeixis.” *Proceedings of the 13th European Conference on Artificial Intelligence (ECAI)*, Brighton, August 1998, pages 303–307. Acceptance ratio: 34%.
- [131] (Munindar P. Singh) “Developing Formal Specifications to Coordinate Heterogeneous Autonomous Agents.” *Proceedings of the 3rd International Conference on Multiagent Systems (ICMAS)*, Paris, July 1998, pages 261–268. Acceptance ratio: 23.2%.
- [132] (Munindar P. Singh) “Synthesizing Distributed Constrained Events from Transactional Workflow Specifications.” *Proceedings of the 12th International Conference on Data Engineering (ICDE)*, New Orleans, February 1996, pages 616–623. Acceptance ratio: 22.7%.
- [133] (Munindar P. Singh, L. Greg Meredith, Christine Tomlinson, and Paul C. Attie) “An Event Algebra for Specifying and Scheduling Workflows.” *Proceedings of the 4th International Conference on Database*

Systems for Advanced Applications (DASFAA), Singapore, April 1995, pages 53–60. Acceptance ratio: 29.7%.

- [134] (Michael N. Huhns and Munindar P. Singh) “Automating Workflows for Service Provisioning: Integrating AI and Database Technologies.” *Proceedings of the 10th IEEE Conference on Artificial Intelligence for Applications (CAIA)*, San Antonio, March 1994, pages 405–411. Acceptance ratio: 29.3%.
- [135] (Paul C. Attie, Munindar P. Singh, Amit P. Sheth, and Marek Rusinkiewicz) “Specifying and Enforcing Intertask Dependencies.” *Proceedings of the 19th International Conference on Very Large Data Bases (VLDB)*, Dublin, August 1993, pages 134–145. Acceptance ratio: 16.3%.
- [136] (Michael N. Huhns, Nigel Jacobs, Tomasz Ksiezyk, Wei-Min Shen, Munindar P. Singh, and Philip E. Cannata) “Integrating Enterprise Information Models in Carnot.” *Proceedings of the International Conference on Intelligent and Cooperative Information Systems (ICICIS)*, Rotterdam, May 1993, pages 32–42. Acceptance ratio: 31.7%.
- [137] (Munindar P. Singh) “A Critical Examination of the Cohen-Levesque Theory of Intentions.” *Proceedings of the 10th European Conference on Artificial Intelligence (ECAI)*, Vienna, August 1992, pages 364–368. Acceptance ratio: 29%.
- [138] (Mona Singh and Munindar P. Singh) “Computing the Temporal Structure of Events in Natural Language.” *Proceedings of the 10th European Conference on Artificial Intelligence (ECAI)*, Vienna, August 1992, pages 528–532. Acceptance ratio: 29%.
- [139] (Munindar P. Singh) “Towards a Formal Theory of Communication for Multiagent Systems.” *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, Sydney, August 1991, pages 69–74. Acceptance ratio: 19.1%.
- [140] (Munindar P. Singh) “Intentions, Commitments and Rationality.” *Proceedings of the 13th Annual Conference of the Cognitive Science Society*, Chicago, August 1991, pages 493–498.
- [141] (Munindar P. Singh) “A Logic of Situated Know-how.” *Proceedings of the National Conference on Artificial Intelligence (AAAI)*, Anaheim, California, July 1991, pages 343–348.
- [142] (Munindar P. Singh) “Towards a Theory of Situated Know-how.” *Proceedings of the 9th European Conference on Artificial Intelligence (ECAI)*, Stockholm, August 1990, pages 604–609. Acceptance ratio: 31.1%.

3.6 Papers in Major Symposia and Workshop Proceedings

The following are papers in major refereed symposia and workshops, mostly with acceptance ratios of about 30% or better.

- [143] (Pinar Yolum and Munindar P. Singh) “Commitment Machines.” *Proceedings of the 8th International Workshop on Agent Theories, Architectures, and Languages (ATAL-01)*, Lecture Notes in Computer Science 2333, Springer-Verlag, 2002, pages 235–247.

- [144] (Zhengang Cheng, Munindar P. Singh, and Mladen A. Vouk) “Composition Constraints for Semantic Web Services.” *Proceedings of the WWW Conference Workshop on Real World RDF and Semantic Web Applications*, Honolulu, May 2002. Long presentation. Acceptance ratio: 30.7%.
- [145] (Bin Yu and Munindar P. Singh) “A Social Mechanism for Reputation Management in Electronic Communities.” *Proceedings of the 4th International Workshop on Cooperative Information Agents (CIA)*, Boston, July 2000, Lecture Notes in Artificial Intelligence 1860, Springer-Verlag, pages 154–165. Acceptance ratio: 36%.
- [146] (Sudhir K. Rustogi and Munindar P. Singh) “The Bases of Effective Coordination in Decentralized Multiagent Systems.” *Proceedings of the 5th International Workshop on Agent Theories, Architectures, and Languages (ATAL)*, Paris, July 1998, pages 149–161. Acceptance ratio: 27.5%.
- [147] (Munindar P. Singh) “A Customizable Coordination Service for Autonomous Agents.” *Proceedings of the 4th International Workshop on Agent Theories, Architectures, and Languages (ATAL)*, Providence, Rhode Island, July 1997, pages 93–106. Acceptance ratio: 26.3%.
- [148] (Munindar P. Singh) “Commitments Among Autonomous Agents in Information-Rich Environments.” *Proceedings of the 8th European Workshop on Modelling Autonomous Agents in a Multi-Agent World (MAAMAW)*, Ronneby, Sweden, May 1997, pages 141–155. Acceptance ratio: 29.4%.
- [149] (Munindar P. Singh) “Formalizing Actions in Branching Time: Model-Theoretic Considerations.” *Proceedings of the 2nd International Workshop on Temporal Representation and Reasoning (TIME)*, Melbourne Beach, Florida, April 1995, pages 97–104. Acceptance ratio: 25%.
- [150] (Michael N. Huhns, Munindar P. Singh, Tomasz Ksiezzyk, and Nigel Jacobs) “Global Information Management via Local Autonomous Agents.” *Proceedings of the 13th International Workshop on Distributed Artificial Intelligence (DAI)*, Seattle, August 1994. Acceptance ratio: 28.8%.

3.7 Papers in Other Refereed Proceedings

- [151] (Amit K. Chopra and Munindar P. Singh) “Colaba: Collaborative design of cross-organizational business processes.” *Proceedings of the International Workshop on Requirements Engineering for Systems, Services, and Systems of Systems (RES⁴)*, held in conjunction with the 19th IEEE International Requirements Engineering Conference, Trento, Italy, August 2011, IEEE Computer Society, pages 36–43.
- [152] (Pankaj R. Telang, Neil Yorke-Smith, and Munindar P. Singh), “A Coupled Operational Semantics for Goals and Commitments.” *Proceedings of the 9th International Workshop on Programming Multiagent Systems (ProMAS)*, Taipei, May 2011, pages 21–36.
- [153] (Sibel Adalı, William A. Wallace, Yi Qian, Priyanka Vijayakumar, and Munindar P. Singh) “A Unified Framework for Trust in Composite Networks.” *Proceedings of the 14th AAMAS Workshop on Trust in Agent Societies*, Taipei, May 2011, pages 1–12.
- [154] (Chung-Wei Hang and Munindar P. Singh) “Trust-Based Recommendation Based on Graph Similarity.” *Proceedings of the 13th AAMAS Workshop on Trust in Agent Societies (Trust)*, Toronto, May 2010, pages 71–81.

- [155] (Christopher J. Hazard and Munindar P. Singh) “An Architectural Approach to Combining Trust and Reputation.” *Proceedings of the 13th AAMAS Workshop on Trust in Agent Societies (Trust)*, Toronto, May 2010, pages 83–93.
- [156] (Pankaj R. Telang and Munindar P. Singh) “Abstracting Business Modeling Patterns from RosettaNet.” *Proceedings of the 8th AAMAS Workshop on Service-Oriented Computing: Agents, Semantics, and Engineering (SOCASE)*, Toronto, May 2010, pages 83–96.
- [157] (Frances Brazier, Frank Dignum, Virginia Dignum, Michael N. Huhns, Tim Lessner, Julian Padget, Thomas Quillinan, and Munindar P. Singh) “Governance of Services: A Natural Function for Agents.” *Proceedings of the 8th AAMAS Workshop on Service-Oriented Computing: Agents, Semantics, and Engineering (SOCASE)*, Toronto, May 2010, pages 8–22.
- [158] (Scott N. Gerard and Munindar P. Singh) “Protocol Refinement: Formalization and Verification.” *Proceedings of the AAMAS Workshop on Agent Communication (AC)*, Toronto, May 2010, pages 19–36.
- [159] (Munindar P. Singh and Amit K. Chopra) “Correctness Properties for Multiagent Systems.” *Proceedings of the 6th AAMAS Workshop on Declarative Agent Languages and Technologies (DALT 2009)*, Budapest, 2010, LNAI 5948, Springer, pages 192–207.
- [160] (Matthew Arrott, Alan D. Chave, Claudiu Farcas, Emilia Farcas, Jack E. Kleinert, Ingolf Krueger, Michael Meisinger, John A. Orcutt, Cheryl Peach, Oscar Schofield, Munindar P. Singh, and Frank L. Vernon) “Integrating Marine Observatories into a System-of-Systems: Messaging in the US Ocean Observatories Initiative.” *Proceedings of Oceans, the MTS-IEEE Conference on Marine Technology for our Future: Global and Local Challenges*, Biloxi, Mississippi, IEEE Computer Society, October 2009, pages 1–9.
- [161] (Amit K. Chopra and Munindar P. Singh) “An Architecture for Multiagent Systems: An Approach Based on Commitments.” *Proceedings of the 7th International Workshop on Programming Multiagent Systems (ProMAS)*, Budapest, May 2009.
- [162] (Derek J. Sollenberger and Munindar P. Singh) “Methodology for Engineering Affective Social Applications.” *Proceedings of the 10th AAMAS Workshop on Agent Oriented Software Engineering (AOSE)*, Budapest, May 2009.
- [163] (Pankaj R. Telang and Munindar P. Singh) “Business Modeling via Commitments.” *Proceedings of the 7th AAMAS Workshop on Service-Oriented Computing: Agents, Semantics, and Engineering (SOCASE)*, Budapest, May 2009, pages 111–125.
- [164] (Chung-Wei Hang and Munindar P. Singh) “Selecting Trustworthy Services.” *Proceedings of the 12th AAMAS Workshop on Trust in Agent Societies (Trust)*, Budapest, May 2009.
- [165] (Derek J. Sollenberger and Munindar P. Singh) “Architecture for Affective Social Games.” *Proceedings of the 1st AAMAS Workshop on Agents for Games and Simulation (AGS)*, Budapest, May 2009.
- [166] (Yathiraj B. Udipi and Munindar P. Singh) “Design Patterns for Policy-Based Service Engagements.” *Proceedings of the 9th IEEE Workshop on Policies for Distributed Systems and Networks*, Palisades, New York, June 2008, pages 97–100.

- [167] (Priyadarshini Paul and Munindar P. Singh) “Emerging Properties of Knowledge Sharing Referral Networks: Considerations of Effectiveness and Fairness.” *Proceedings of the 7th International Workshop on Agents and Peer-to-Peer Computing*, Estoril, Portugal, May 2008, 11 pages.
- [168] (Yathiraj B. Udupi and Munindar P. Singh) “Information Sharing among Autonomous Agents in Referral Networks.” *Proceedings of the 5th International Workshop on Agents and Peer-to-Peer Computing*, Honolulu, May 2007, 12 pages.
- [169] (Ashok U. Mallya and Munindar P. Singh) “Introducing Preferences into Commitment Protocols.” *Proceedings of the AAMAS Workshop on Agent Communication (AC)*, Utrecht, The Netherlands, July 2005.
- [170] (Ashok U. Mallya and Munindar P. Singh) “Incorporating Commitment Protocols into Tropos.” *Proceedings of the AAMAS Workshop on Agent Oriented Software Engineering (AOSE)*, Utrecht, The Netherlands, July 2005.
- [171] (Nirmit Desai, Ashok U. Mallya, Amit K. Chopra, and Munindar P. Singh) “OWL-P: A Methodology for Business Process Modeling and Enactment.” *Proceedings of the AAMAS Workshop on Agent Oriented Information Systems (AOIS)*, Utrecht, The Netherlands, July 2005.
- [172] (E. Michael Maximilien and Munindar P. Singh) “Multiagent System for Dynamic Web Services Selection.” *Workshop on Service-Oriented Computing and Agent-Based Engineering (SOCABE)*, Utrecht, The Netherlands, 2005.
- [173] (Ashok U. Mallya and Munindar P. Singh) “A Semantic Approach for Designing Commitment Protocols.” *Proceedings of the International Workshop on Agent Communication (AC)*, July 2004, Lecture Notes in Computer Science 3396, Springer-Verlag, 2005, pages 33–49. Acceptance ratio: 53.8%.
- [174] (Amit K. Chopra, Nirmit V. Desai, Ashok U. Mallya, and Munindar P. Singh) “Modeling Flexible Business Processes.” *Proceedings of the 1st AAMAS Workshop on Declarative Agent Languages and Technologies (DALT)*, New York, July 2004. Acceptance ratio: 51.3%.
- [175] (Feng Wan and Munindar P. Singh) “Analyzing Multiparty Agreements with Commitments.” *Proceedings of the 6th International Bi-Conference Workshop on Agent-Oriented Information Systems (AOIS)*, New York, July 2004. Lecture Notes in Computer Science 3508, Springer-Verlag, 2005, pages 85–96.
- [176] (Ashok U. Mallya and Munindar P. Singh) “A Semantic Approach for Designing E-Business Protocols.” *Semantic Web Services and Web Process Composition, First International Workshop (SWSWPC)*, San Diego, July 2004. Revised Selected Papers, Lecture Notes in Computer Science 3387, Springer-Verlag, 2005, pages 111–123. Acceptance ratio: 45%.
- [177] (Ashok U. Mallya and Munindar P. Singh) “A Semantic Approach for Designing E-Business Protocols.” *Proceedings of the 2nd International Conference on Web Services (ICWS)*, San Diego, IEEE Press, July 2004, pages 742–745. Short research paper. Acceptance ratio: 37.4%.
- [178] (E. Michael Maximilien and Munindar P. Singh) “An Ontology for Web Service Ratings and Reputations.” *Proceedings of the 1st International Workshop on Ontologies and Agent Systems (OAS)*, Melbourne, July 2003.

- [179] (E. Michael Maximilien and Munindar P. Singh) “Agent-Based Architecture for Autonomic Web Service Selection.” *Proceedings of the 1st International Workshop on Web Services and Agent-Based Engineering (WSABE)*, Melbourne, July 2003. Refereed position paper.
- [180] (Bin Yu and Munindar P. Singh) “Incentive Mechanisms for Peer-to-Peer Systems.” *Proceedings of the 2nd International Workshop on Agents and Peer-to-Peer Computing*, Melbourne, July 2003, Lecture Notes in Computer Science 2872, Springer-Verlag, pages 77–88. Acceptance ratio: 63.2%.
- [181] (Amit K. Chopra and Munindar P. Singh) “Nonmonotonic Commitment Machines.” *Advances in Communication: Proceedings of the International Workshop on Agent Communication Languages and Conversation Policies (ACL)*, Melbourne, July 2003, Lecture Notes in Artificial Intelligence 2922, Springer-Verlag, 2004, pages 183–200. Acceptance ratio: 60.0%.
- [182] (Ashok U. Mallya, Pinar Yolum, and Munindar P. Singh) “Resolving Commitments Among Autonomous Agents.” *Proceedings of the International Workshop on Agent Communication Languages and Conversation Policies (ACL)*, Melbourne, July 2003, Lecture Notes in Artificial Intelligence 2922, Springer-Verlag, 2004, pages 166–182. Acceptance ratio: 60.0%.
- [183] (Pinar Yolum and Munindar P. Singh) “Achieving Trust via Service Graphs.” *Proceedings of the 6th International Workshop on Trust, Privacy, Deception, and Fraud in Agent Societies*, Melbourne, July 2003.
- [184] (Pinar Yolum and Munindar P. Singh) “Self-Organizing Referral Networks: A Process View of Trust and Authority.” *Proceedings of the International Workshop on Engineering Self-Organising Applications (ESOA)*, Melbourne, July 2003.
- [185] (Pinar Yolum and Munindar P. Singh) “Emergent Personalized Communities in Referral Networks.” *Proceedings of the IJCAI Workshop on Intelligent Techniques for Web Personalization*, Acapulco, August 2003.
- [186] (Yathiraj B. Udipi, Pinar Yolum, and Munindar P. Singh) “Trustworthy Service Caching: Cooperative Search in P2P Information Systems.” *Proceedings of the 5th International Bi-Conference Workshop on Agent-Oriented Information Systems (AOIS)*, Melbourne, July 2003. Acceptance ratio: 50.0%.
- [187] (Raghuram M. Sreenath and Munindar P. Singh) “A Community-Based Approach for Selecting Service Providers.” *Proceedings of the 1st International Conference on Web Services (ICWS)*, Las Vegas, June 2003, pages 177–183.
- [188] (Bin Yu and Munindar P. Singh) “Search in Referral Networks.” *Proceedings of the 1st International Workshop on Regulated Agent Systems (RASTA)*, Bologna, July 2002.
- [189] (Pinar Yolum and Munindar P. Singh) “Flexible Caching in Peer-to-Peer Information Systems.” *Proceedings of the 4th International Bi-Conference Workshop on Agent-Oriented Information Systems (AOIS)*, Bologna, July 2002.
- [190] (Pinar Yolum and Munindar P. Singh) “An Agent-Based Approach for Trustworthy Service Location.” *Proceedings of the 1st International Workshop on Agents and Peer-to-Peer Computing*, Bologna, July 2002. Acceptance ratio: 47.4%.

- [191] (Munindar P. Singh) “Trustworthy Service Composition: Challenges and Research Questions.” *Proceedings of the Autonomous Agents and Multi-Agent Systems Workshop on Deception, Fraud and Trust in Agent Societies*, Bologna, July 2002.
- [192] (Bin Yu and Munindar P. Singh) “Towards a Probabilistic Model of Distributed Reputation Management.” *Proceedings of the Autonomous Agents Workshop on Deception, Fraud and Trust in Agent Societies*, Montreal, June 2001.
- [193] (Jie Xing, Feng Wan, Sudhir K. Rustogi, and Munindar P. Singh) “Commitment-Based Interoperation for E-Commerce.” *Proceedings of the International Symposium on Autonomous Decentralized Systems*, Dallas, March 2001.
- [194] (Jie Xing and Munindar P. Singh) “Formalization of a Commitment-Based Agent Coordination Model.” *Proceedings of the ACM Symposium on Applied Computing: Special Track on Coordination*, March 2001. Acceptance ratio: 37.9%.
- [195] (Pinar Yolum and Munindar P. Singh) “Commitment-Based Enhancement of E-Commerce Protocols.” *Proceedings of the Workshop on Web-based Infrastructures and Coordination Architectures for Collaborative Enterprises* held as part of the *8th Workshop-Conference on Enabling Technologies: Infrastructure for Enterprises (WET ICE)*, Gaithersburg, Maryland, June 2000. IEEE Computer Society Press, pages 278–283. Acceptance ratio: 47.6%.
- [196] (Munindar P. Singh) “A Social Semantics for Agent Communication Languages.” *Issues in Agent Communication: Postproceedings of the IJCAI 1999 Workshop on Agent Communication Languages*, Lecture Notes in Artificial Intelligence 1916, Springer-Verlag, Berlin, November 2000, pages 31–40.
- [197] (Feng Wan, Sudhir K. Rustogi, Jie Xing, and Munindar P. Singh) “Multiagent Workflow Management.” *Proceedings of the IJCAI Workshop on Intelligent Workflow and Process Management: The New Frontier for AI in Business*, August 1999.
- [198] (Bin Yu and Munindar P. Singh) “A Multiagent System for Expertise Location.” *Working Notes of the AAI Workshop on Intelligent Information Systems*, July 1999, pages 66–69.
- [199] (Manuel Aparicio IV, Peter Herman, Wendy Stephens, Anuj K. Jain, Munindar P. Singh) “Agent Information Contracts within Virtual Private Networks.” *Proceedings of the 3rd IEEE High-Assurance Systems Engineering Symposium (HASE)*, Washington, DC, November 1998, pages 304–311. Acceptance ratio: 40%.
- [200] (Yu Lei and Munindar P. Singh) “A Comparison of Workflow Metamodels.” *Proceedings of the ER Workshop on Behavioral Modeling and Design Transformations: Issues and Opportunities in Conceptual Modeling*, Los Angeles, November 1997, 12 pages.
- [201] (Mona Singh, James H. Barnett, and Munindar P. Singh) “Enhancing Conversational Moves for Portable Dialogue Systems.” *Working Notes of the AAI Fall Symposium on Communicative Action in Humans and Machines*, Cambridge, Massachusetts, November 1997, 7 pages.
- [202] (Mona Singh, James H. Barnett, and Munindar P. Singh) “Automating Spoken Dialogue Systems.” *Proceedings of the 10th International Symposium on Methodologies for Intelligent Systems (ISMIS)*, Charlotte, October 1997, pages 207–216. Acceptance ratio: 49%.

- [203] (Anuj K. Jain and Munindar P. Singh) “Using Spheres of Commitment to Support Virtual Enterprises.” *Proceedings of the 4th ISPE International Conference on Concurrent Engineering: Research and Applications (CE)*, Troy, Michigan, August 1997, pages 469–476.
- [204] (Mona Singh and Munindar P. Singh) “On the Temporal Structure of Events.” *Proceedings of the AAAI Workshop on Spatial and Temporal Reasoning*, Providence, Rhode Island, July 1997, 8 pages.
- [205] (Munindar P. Singh) “Multiagent Systems as Spheres of Commitment.” *Proceedings of the International Conference on Multiagent Systems (ICMAS) Workshop on Norms, Obligations, and Conventions*, Kyoto, December 1996, 13 pages.
- [206] (Munindar P. Singh and Mladen A. Vouk) “Scientific Workflows: Scientific Computing Meets Transactional Workflows.” In Amit Sheth (editor), *Reference Papers of the NSF Workshop on Workflow and Process Automation in Information Systems: State-of-the-art and Future Directions*, 1996.
- [207] (Munindar P. Singh) “Semantical Considerations on Workflows: An Algebra for Intertask Dependencies.” *Proceedings of the 5th International Workshop on Database Programming Languages (DBPL)*, Gubbio, Umbria, Italy, September 1995, pages 61–75. Acceptance ratio: 40%.
- [208] (Michael N. Huhns, Munindar P. Singh, and Gregory E. Pitts) “The Environmental Information Mall.” *Proceedings of the IJCAI Workshop on Artificial Intelligence and the Environment*, Montreal, August 1995.
- [209] (Munindar P. Singh and Mona Singh) “A Natural Language Interface to Information Retrieval Systems.” *Proceedings of the 2nd Conference of the Pacific Association for Computational Linguistics (PACLING)*, Brisbane, April 1995, 9 pages.
- [210] (Mona Singh and Munindar P. Singh) “The Temporal Structure of Narratives: A Semantic Approach.” *Proceedings of the 2nd Conference of the Pacific Association for Computational Linguistics (PACLING)*, Brisbane, April 1995, 8 pages.
- [211] (Michael N. Huhns and Munindar P. Singh) “A Mediated Approach to Open, Large-scale Information Management.” *Proceedings of the IEEE International Phoenix Conference on Computers and Communications*, Phoenix, March 1995, pages 115–121.
- [212] (Munindar P. Singh and Christine Tomlinson) “Workflow Execution Through Distributed Events.” *Proceedings of the 6th International Conference on Management of Data (COMAD)*, Bangalore, December 1994, pages 117–132. Acceptance ratio: 35.0%.
- [213] (Michael N. Huhns, Munindar P. Singh, and Tomasz Ksiezzyk) “Global Information Management via Local Autonomous Agents.” *Proceedings of the ICOT International Symposium on Fifth Generation Computer Systems: Workshop on Heterogeneous Cooperative Knowledge Bases*, Tokyo, December 1994, pages 1–15. Subsumes [150].
- [214] (Munindar P. Singh) “Maintenance and Prevention: Formalization and Fixpoint Characterization.” *Proceedings of the ECAI Workshop on Logic and Change*, Amsterdam, August 1994, 11 pages.

- [215] (Darrell Woelk, Paul Attie, Philip E. Cannata, Greg Meredith, Munindar P. Singh, and Christine Tomlinson) “Task Scheduling Using Intertask Dependencies in Carnot.” *Proceedings of the ACM Sigmod International Conference on Management of Data (Sigmod)*, Washington, May 1993, pages 491–494. Industrial session paper.
- [216] (Mona Singh and Munindar P. Singh) “Temporal Adverbials and the Structure of Events.” *Proceedings of the 4th Symposium on Logic and Language*, Budapest, August 1992. 4 pages.
- [217] (Michael N. Huhns and Munindar P. Singh) “The Semantic Integration of Information Models.” *Proceedings of the AAAI Workshop on Cooperation among Heterogeneous Intelligent Agents*, Washington, July 1992, 8 pages.
- [218] (Munindar P. Singh) “On the Semantics of Protocols Among Distributed Intelligent Agents.” *Proceedings of the IEEE International Phoenix Conference on Computers and Communications*, Phoenix, April 1992, pages 379–386.
- [219] (Munindar P. Singh) “Social and Psychological Commitments in Multiagent Systems.” *Working Notes of the AAAI Fall Symposium on Knowledge and Action at Social and Organizational Levels*, Monterey, California, November 1991, pages 104–106.
- [220] (Munindar P. Singh) “On the Commitments and Precommitments of Limited Agents.” *Proceedings of the IJCAI Workshop on Theoretical and Practical Design of Rational Agents*, Sydney, August 1991, 11 pages.
- [221] (Munindar P. Singh) “Towards a Formal Semantics for Speech Acts.” *Proceedings of the 2nd Meeting on the Mathematics of Language*, Tarrytown, New York, May 1991. Organized by the Association for Computational Linguistics (through its Special Interest Group on Mathematics of Language), 6 pages. Acceptance ratio: 50.0%.
- [222] (Munindar P. Singh) “Group Intentions.” *Proceedings of the 10th International Workshop on Distributed Artificial Intelligence (DAI)*, Bandera, Texas, October 1990, 26 pages. Acceptance ratio: 37.2%.
- [223] (Munindar P. Singh and Nicholas M. Asher) “Towards a Formal Theory of Intentions.” *Proceedings of the European Workshop on Logics in Artificial Intelligence (JELIA)*, Amsterdam, September 1990, pages 472–486. Acceptance ratio: 39.5%.
- [224] (Munindar P. Singh) “Planning and Necessity.” *Proceedings of the Rocky Mountain Conference on Artificial Intelligence*, Denver, June 1988, pages 46–55.

3.8 Book Chapters

- [225] (Paolo Torroni, Federico Chesani, Pinar Yolum, Marco Gavanelli, Munindar P. Singh, Evelina Lamma, Marco Alberti, and Paola Mello), “Modelling Interactions via Commitments and Expectations.” In Virginia Dignum (editor), *Handbook of Research on Multi-Agent Systems: Semantics and Dynamics of Organizational Models*, chapter 11, IGI Global, Hershey, Pennsylvania, 2009, pages 263–284.

- [226] (Manuel A. Aparicio IV and Munindar P. Singh), “Concepts and Practice of Personalization.” In Munindar P. Singh (editor), *Practical Handbook of Internet Computing*, Chapman & Hall and CRC Press, Baton Rouge, 2004.
- [227] (Munindar P. Singh) “Introduction to Web Semantics.” In Munindar P. Singh (editor), *Practical Handbook of Internet Computing*, Chapman & Hall and CRC Press, Baton Rouge, 2004.
- [228] (Michael N. Huhns and Munindar P. Singh), “Agents and Multiagent Systems: Themes, Approaches, and Challenges.” In Michael N. Huhns and Munindar P. Singh (editors), *Readings in Agents*, Morgan Kaufmann, San Francisco, 1998, pages 1–23.
- [229] (Michael N. Huhns and Munindar P. Singh), “Managing Heterogeneous Transaction Workflows with Co-operating Agents.” In Nicholas R. Jennings and Michael J. Wooldridge (editors), *Agent Technology: Foundations, Applications, and Markets*, Springer-Verlag, Berlin, 1997, pages 219–239.
- [230] (Mladen A. Vouk and Munindar P. Singh) “Quality of Service and Scientific Workflows.” In Ronald F. Boisvert (editor), *Quality of Numerical Software: Assessment and Enhancements*, Chapman and Hall, London, 1997, pages 77–89. Subsumes [206].
- [231] (Munindar P. Singh) “Semantical Considerations on Some Primitives for Agent Specification.” In Michael Wooldridge, Jörg Müller, and Milind Tambe (editors), *Intelligent Agents II*, Lecture Notes in Computer Science 1037, Springer-Verlag, Berlin, 1996, pages 49–64. Revised proceedings of the *IJCAI Workshop on Agent Theories, Architectures, and Languages (ATAL)*, Montreal, Canada, August 1995. Acceptance ratio: 48.2%.
- [232] (Michael N. Huhns and Munindar P. Singh) “Information Management for Cooperative Engineering.” in Arthur B. Baskin, George Kovacs, and Gianni Jacucci (editors), *Cooperative Knowledge Processing for Engineering Design*, Kluwer, Norwell, Massachusetts, 1999, pages 237–262. Published under the auspices of the International Federation of Information Processing Societies (IFIP).
- [233] (Darrell Woelk, Philip Cannata, Michael Huhns, Nigel Jacobs, Tomasz Ksiezyk, Greg Lavender, Greg Meredith, Kayliang Ong, Wei-Min Shen, Munindar Singh, and Christine Tomlinson) “Carnot Prototype.” In Omran Bukhres and Ahmed K. Elmagarmid (editors), *Object-Oriented Multidatabase Systems*, Prentice Hall, Englewood Cliffs, New Jersey, 1996, pages 621–648.
- [234] (Michael N. Huhns, Nigel Jacobs, Tomasz Ksiezyk, Wei-Min Shen, Munindar P. Singh, and Philip E. Cannata) “Enterprise Information Modeling and Model Integration in Carnot.” In Charles Petrie, Jr. (editor), *Enterprise Integration Modeling*, MIT Press, Cambridge, Massachusetts, 1992, pages 290–299.
- [235] (Munindar P. Singh) “Group Ability and Structure.” In Yves Demazeau and Jean-Pierre Müller (editors), *Decentralized A.I., volume 2*, Elsevier, Amsterdam, 1991, pages 127–145. Revised proceedings of the *2nd European Workshop on Modeling Autonomous Agents in a Multi Agent World (MAAMAW)*, St. Quentin en Yvelines, France, August 1990.

3.9 Bulletin Articles

These publications are refereed, but not as intensively as journals.

- [236] (E. Michael Maximilien and Munindar P. Singh) “Conceptual Model of Web Service Reputation.” *SIGMOD Record*, ACM Special Interest Group on Management of Data, volume 31, number 4, December 2002, pages 36–41.
- [237] (E. Michael Maximilien and Munindar P. Singh) “Reputation and Endorsement for Web Services.” *SIGecom Exchanges*, ACM Special Interest Group on E-Commerce, volume 3, number 1, Winter 2002, pages 24–31.
- [238] (Christine Tomlinson, Paul Attie, Phil Cannata, Greg Meredith, Amit Sheth, Munindar Singh, and Darrell Woelk) “Workflow Support in Carnot.” *Bulletin of the IEEE Technical Committee on Data Engineering: Special Issue on Workflow and Extended Transaction Systems*, volume 16, number 2, June 1993, pages 33–36.

3.10 Short Papers and Research Prototype Abstracts

These publications are refereed, but not as intensively as full-length conference articles.

- [239] (Chung-Wei Hang, Yonghong Wang, and Munindar P. Singh) “An Adaptive Probabilistic Trust Model and its Evaluation.” *Proceedings of the 7th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Estoril, Portugal, May 2008, pages 1485-1488. Short paper. Acceptance ratio: 37.2%.
- [240] (Yathiraj B. Udupi and Munindar P. Singh) “Formal Aspects of Classifying and Selecting Business Services.” *Proceedings of the 8th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Budapest, May 2009, 2 pages. Acceptance ratio: 40.6%.
- [241] (Derek J. Sollenberger and Munindar P. Singh) “Koko: Architecture and Methodology for Engineering Social Affective Applications.” *Proceedings of the 8th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Budapest, May 2009, 2 pages. Acceptance ratio: 40.6%.
- [242] (Derek J. Sollenberger and Munindar P. Singh) “Koko: Engineering Affective Applications.” *Proceedings of the 8th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Budapest, May 2009, 2 pages. Demonstration abstract.
- [243] (Amit K. Chopra and Munindar P. Singh) “Choice and Interoperation in Protocol Enactment.” *Proceedings of the 6th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Hawaii, May 2007, pages 135–137. Acceptance ratio: 47.6%.
- [244] (Yathiraj B. Udupi and Munindar P. Singh) “InterPol: A Policy Framework for Managing Trust and Privacy in Referral Networks.” *Proceedings of the 6th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Hawaii, May 2007, pages 1088–1090. Acceptance ratio: 47.6%.

- [245] (Yathiraj B. Udipi and Munindar P. Singh) “Dynamics of Contract-Based Organizations: A Formal Approach Based on Institutions.” *Proceedings of the 6th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Hawaii, May 2007, pages 82–84. Acceptance ratio: 47.6%.
- [246] (Payal Chakravarty and Munindar P. Singh) “An Event-Driven Approach for Agent-Based Business Process Enactment.” *Proceedings of the 6th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Hawaii, May 2007, pages 1261–1263. Acceptance ratio: 47.6%.
- [247] (Nirmit Desai, Zhengang Cheng, Amit K. Chopra, and Munindar P. Singh) “Verifying Commitment Protocols and their Compositions.” *Proceedings of the 6th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Hawaii, May 2007, pages 147–149. Acceptance ratio: 47.6%.
- [248] (Nirmit Desai, Amit K. Chopra, and Munindar P. Singh) “Business Process Adaptations via Protocols.” *Proceedings of the 5th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, short paper. Hakodate, Japan, ACM Press, May 2006, pages 1326–1328. Acceptance ratio: 47.6%.
- [249] (E. Michael Maximilien and Munindar P. Singh) “Self-Adjusting Trust and Selection for Web Services.” *Extended Proceedings of 2nd IEEE International Conference on Autonomic Computing (ICAC)*, Seattle, June 2005, pages 385–386. Poster. Acceptance ratio: 42.7%.
- [250] (Ashok U. Mallya, Nirmit Desai, Amit K. Chopra and Munindar P. Singh) “OWL-P: OWL for Protocols and Processes.” *Proceedings of the 4th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Amsterdam, ACM Press, July 2005, Industrial Track and Demos volume, pages 139–140. Research prototype demonstration. Acceptance ratio: 81.8%.
- [251] (Amit K. Chopra and Munindar P. Singh) “Commitments for Flexible Business Processes.” *Proceedings of the 3rd International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, New York, IEEE Press, July 2004, pages 1362–1363. Poster. Acceptance ratio: 50%.
- [252] (Ashok U. Mallya and Munindar P. Singh) “A Semantic Approach for Designing Commitment Protocols.” *Proceedings of the 3rd International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, New York, IEEE Press, July 2004, pages 1364–1365. Poster. Acceptance ratio: 50%.
- [253] (Yathiraj B. Udipi, Pinar Yolum, and Munindar P. Singh) “Agent-Based Peer-to-Peer Service Networks: A Study of Effectiveness and Structure Evolution.” *Proceedings of the 3rd International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, New York, IEEE Press, July 2004, pages 1336–1337. Poster. Acceptance ratio: 50%.
- [254] (Bin Yu, Cuihong Li, Katia Sycara, and Munindar P. Singh) “Dynamic Pricing Mechanisms for Peer-to-Peer Systems.” *Proceedings of the 3rd International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, New York, IEEE Press, July 2004, pages 1426–1427. Poster. Acceptance ratio: 50%.

- [255] (Ashok U. Mallya and Munindar P. Singh) “A Semantic Approach for Designing Business Protocols.” *Proceedings of the 13th International World Wide Web Conference (WWW)*, New York, ACM Press, May 2004, pages 308–309. Poster. Acceptance ratio: 57%.
- [256] (Pinar Yolum and Munindar P. Singh) “Ladders of Success: An Empirical Approach to Trust.” *Proceedings of the 2nd International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Melbourne, ACM Press, July 2003. Poster, pages 1168-1169. Acceptance ratio: 56.9%.
- [257] (Bin Yu and Munindar P. Singh) “An Agent-Based Approach to Knowledge Management.” *Proceedings of the Eleventh International Conference on Information and Knowledge Management (CIKM)*, ACM Press, Washington, November 2002, pages 642–644. Poster.
- [258] (Bin Yu and Munindar P. Singh) “Emergence of Agent-Based Referral Networks.” *Proceedings of the 1st International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, ACM Press, Bologna, July 2002, pages 1268–1269. Poster.
- [259] (Pinar Yolum and Munindar P. Singh) “Flexible Execution of E-Commerce Protocols.” *Proceedings of the International Conference on Autonomous Agents*, Montreal, June 2001. Poster.
- [260] (Mahadevan Venkatraman and Bin Yu and Munindar P. Singh) “Trust and Reputation Management in a Small-World Network.” *Proceedings of the 4th International Conference on MultiAgent Systems (ICMAS)*, Boston, July 2000, pages 449–450. Poster.
- [261] (Munindar P. Singh) “Toward Interaction-Oriented Programming.” *Proceedings of the International Conference on Multiagent Systems (ICMAS)*, Kyoto, December 1996, page 457. Poster abstract. Acceptance ratio: 51.9%.
- [262] (Munindar P. Singh, Christine Tomlinson, and Darrell Woelk) “Relaxed Transaction Processing.” *Proceedings of the ACM Sigmod International Conference on Management of Data (Sigmod)*, Minneapolis, May 1994, page 505. Description of a research prototype demonstration.

3.11 Technical Reports

Only reports that are substantially different from, or considerably extend, the above articles are included. Generally, the reports are either under submission or are being disseminated prior to submission. For some, my work has progressed in another direction, but they are still cited by others.

- [263] (Pinar Yolum and Munindar P. Singh) “Locating Services in Adaptive Peer-to-Peer Information Systems.” Technical Report TR-2002-05, Department of Computer Science, North Carolina State University, Raleigh, February 2002.
- [264] (Munindar P. Singh) “Coordinating Heterogeneous Autonomous Agents.” Technical Report TR-97-07, Department of Computer Science, North Carolina State University, Raleigh, August 1997. Subsumes [147].
- [265] (Munindar P. Singh) “Formal Aspects of Workflow Management, Part 2: Distributed Scheduling.” Technical Report TR-97-05, Department of Computer Science, North Carolina State University, Raleigh, February 1997. Subsumes [132].

- [266] (Munindar P. Singh) “Formal Aspects of Workflow Management, Part 1: Semantics.” Technical Report TR-97-04, Department of Computer Science, North Carolina State University, Raleigh, February 1997. Subsumes [207].
- [267] (Munindar P. Singh) “Formal Aspects of Workflow Management.” Technical Report TR-96-08, Department of Computer Science, North Carolina State University, Raleigh, May 1996.
- [268] (Munindar P. Singh) “Toward interaction oriented programming.” Technical Report TR-96-15, Department of Computer Science, North Carolina State University, Raleigh, 1996.
- [269] (Munindar P. Singh) “A Conceptual Analysis of Commitments in Multiagent Systems.” Technical Report TR-96-09, Department of Computer Science, North Carolina State University, Raleigh, May 1996.
- [270] (Munindar P. Singh and Christine Tomlinson) “Temporal Logic Constraints for Workflows.” *Technical Report Number Carnot-087-94*, MCC, Austin, 1994.
- [271] (Munindar P. Singh, L. Greg Meredith, Christine Tomlinson, and Paul C. Attie) “An Algebraic Approach to Workflow Scheduling.” *Technical Report Number Carnot-049-94*, MCC, Austin, 1994.
- [272] (Mona Singh, Munindar P. Singh, Darrell Woelk) “Knowledge-Based Natural Language Interfaces for Information Access.” *Technical Report Number KBNL-086-93*, MCC, Austin. June 1993.
- [273] (Munindar P. Singh) “Intentions for Multiagent Systems.” *Technical Report Number KBNL-086-93*, MCC, Austin, June 1993. Subsumes [222].

3.12 Technical Columns

Being Interactive The following are articles from this bimonthly column, which I wrote while the editor-in-chief of *IEEE Internet Computing* (from January 1999 to December 2002).

- [274] “Who You Gonna Call?” *IEEE Internet Computing*, volume 6, number 6, November–December 2002, pages 4–5.
- [275] “Deep Web Structure.” *IEEE Internet Computing*, volume 6, number 5, September–October 2002, pages 4–5.
- [276] “Treating Health Care.” *IEEE Internet Computing*, volume 6, number 4, July–August 2002, pages 4–5.
- [277] “The Pragmatic Web.” *IEEE Internet Computing*, volume 6, number 3, May–June 2002, pages 4–5.
- [278] “Working the Flow.” *IEEE Internet Computing*, volume 6, number 2, March–April 2002, pages 4–5.
- [279] “Managing Network Privacy.” *IEEE Internet Computing*, volume 6, number 1, January–February 2002, pages 4–5.
- [280] “Privacy and Open Services.” *IEEE Internet Computing*, volume 5, number 6, November–December 2001, pages 4–5.

- [281] “Services and Situations.” *IEEE Internet Computing*, volume 5, number 5, September–October 2001, pages 4–5.
- [282] “The Invisible Wireless Web.” *IEEE Internet Computing*, volume 5, number 4, July–August 2001, pages 6–7.
- [283] “Physics of Service Composition.” *IEEE Internet Computing*, volume 5, number 3, May–June 2001, pages 6–7.
- [284] “An Evolutionary Look at E-Commerce.” *IEEE Internet Computing*, volume 5, number 2, March–April 2001, pages 4–5.
- [285] “Peering at Peer-to-Peer Computing.” *IEEE Internet Computing*, volume 5, number 1, January–February 2001, pages 4–5.
- [286] “The Intelligence Within.” *IEEE Internet Computing*, volume 4, number 6, November–December 2000, pages 6–7.
- [287] “Beyond Geography.” *IEEE Internet Computing*, volume 4, number 5, September–October 2000, pages 4–5.
- [288] “The Service Web.” *IEEE Internet Computing*, volume 4, number 4, July–August 2000, pages 4–5.
- [289] “Engineering Interoperation.” *IEEE Internet Computing*, volume 4, number 3, May–June 2000, pages 4–5.
- [290] “Trusting our Personal Assistants.” *IEEE Internet Computing*, volume 4, number 2, March–April 2000, pages 4–5.
- [291] “In the Thick of Things.” *IEEE Internet Computing*, volume 4, number 1, January–February 2000, pages 4–5.
- [292] “The End of the Supply Chain?” *IEEE Internet Computing*, volume 3, number 6, November–December 1999, pages 4–5.
- [293] “The E-Commerce Inversion.” *IEEE Internet Computing*, volume 3, number 5, September–October 1999, pages 4–5.
- [294] “Degrees of Separation.” *IEEE Internet Computing*, volume 3, number 4, July–August 1999, pages 4–5.
- [295] “Value-Oriented Electronic Commerce.” *IEEE Internet Computing*, volume 3, number 3, May–June 1999, pages 6–7.
- [296] “Write Asynchronous, Run Synchronous.” *IEEE Internet Computing*, volume 3, number 2, March–April 1999, pages 4–5.
- [297] “The True Meaning of Analog.” *IEEE Internet Computing*, volume 3, number 1, January–February 1999, pages 6–7.

Agents on the Web The following are articles of this bimonthly column, which I coauthored with Michael N. Huhns over 1997–1998.

- [298] “Cognitive Agents.” *IEEE Internet Computing*, volume 2, number 6, November–December 1998, pages 87–89.
- [299] “Personal Assistants.” *IEEE Internet Computing*, volume 2, number 5, September–October 1998, pages 90–92.
- [300] “Workflow Agents.” *IEEE Internet Computing*, volume 2, number 4, July–August 1998, pages 94–96.
- [301] “All Agents are not Created Equal.” *IEEE Internet Computing*, volume 2, number 3, May–June 1998, pages 94–96.
- [302] “Agent Jurisprudence.” *IEEE Internet Computing*, volume 2, number 2, March–April 1998, pages 90–91.
- [303] “Anthropoid Agents.” *IEEE Internet Computing*, volume 2, number 1, January–February 1998, pages 94–95.
- [304] “Ontologies for Agents.” *IEEE Internet Computing*, volume 1, number 6, November–December 1997, pages 81–83.
- [305] “The Agent Test.” *IEEE Internet Computing*, volume 1, number 5, September–October 1997, pages 78–79.
- [306] “Mobile Agents.” *IEEE Internet Computing*, volume 1, number 3, May–June 1997, pages 80–82.
- [307] “Conversational Agents.” *IEEE Internet Computing*, volume 1, number 2, March–April 1997, pages 73–75.
- [308] “Agents are Everywhere.” *IEEE Internet Computing*, volume 1, number 1, January–February 1997, page 87.

3.13 Invited Foreword

- [309] (Munindar P. Singh) “Coordination and the Internet.” In Andrea Omicini, Franco Zambonelli, Matthias Klusch, and Robert Tolksdorf (editors), *Coordination of Internet Agents: Models, Technologies, and Applications*. Springer-Verlag, Berlin, 2001, pages V–VII.

3.14 Book Reviews

- [310] (Munindar P. Singh) Book review of Michael Schroeder, *Autonomous, Model-Based Diagnosis Agents*, Kluwer. *ACM Computing Reviews*, volume 39, December 1998.
- [311] (Munindar P. Singh) “Agents Misunderstood.” Book review of Peter Wayner, *Agents Unleashed*, Academic Press. *IEEE Spectrum*, volume 33, number 2, February 1996, pages 10, 12.
- [312] (Munindar P. Singh) “Distributed AI in Action.” Book review of Thies Wittig (editor), *ARCHON: An Architecture for Multi-Agent Systems*, Ellis Horwood and Prentice Hall. *ACM SIGART Bulletin*, 1996.

3.15 Editorials

- [313] (Munindar P. Singh) “Self-Renewing Applications.” *IEEE Internet Computing*, volume 15, number 3, May-June 2011, pages 3–5. Invited by the editor-in-chief.
- [314] (Vinton G. Cerf and Munindar P. Singh) “2010 Computing Outlook.” *IEEE Computing Now*, January 2010. Guest editorial. www.computer.org/portal/web/computingnow/archive/january2010
- [315] (Vinton G. Cerf and Munindar P. Singh) “Internet Predictions.” *IEEE Internet Computing*, volume 14, number 1, January-February 2010, pages 10–11. Guest editorial.
- [316] (Matei Ripeanu, Munindar P. Singh, and Sudharshan Vazhkudai) “Virtual Organizations.” *IEEE Internet Computing*, volume 12, number 2, March-April 2008, pages 10–12. Guest editorial.
- [317] (Anupam Joshi and Munindar P. Singh) “Multiagent Systems on the Net.” *Communications of the ACM (CACM)*, volume 42, number 3, March 1999, pages 38–40. Guest editorial.
- [318] (Wolfgang Klas and Munindar P. Singh) “Selected Papers from CoopIS-97.” *International Journal of Cooperative Information Systems (IJCIS)*, volume 6, numbers 3–4, September–December 1997, pages 217–218. Guest editorial.
- [319] (Munindar P. Singh and Michael N. Huhns) “Internet-Based Agents: Applications and Infrastructure.” *IEEE Internet Computing*, volume 1, number 4, July-August 1997, pages 8–9. Introduction to the theme issue on Agents.
- [320] (Michael N. Huhns and Munindar P. Singh) “Formal Methods in Cooperative Information Systems: Multiagent Systems.” *International Journal of Cooperative Information Systems (IJCIS)*, volume 6, number 1, January 1997, pages 1–2. Guest editorial.
- [321] (Michael N. Huhns and Munindar P. Singh) “Formal Methods in Cooperative Information Systems: Heterogeneous Databases.” *International Journal of Cooperative Information Systems (IJCIS)*, volume 5, number 4, December 1996, pages 365–366. Guest editorial.

3.16 Miscellaneous External Publications

These are position statements, short encyclopedia articles, and such.

- [322] (Munindar P. Singh and Nirmal Desai), “Multidisciplinary Views of Business Contracts.” *Proceedings of the 8th International Conference on Service-Oriented Computing (ICSOC)*, December 2010, page 730. Tutorial abstract.
- [323] (Sven Koenig, Sarit Kraus, Munindar P. Singh, Michael Wooldridge), “Report on the Fourth International Joint Conference on Autonomous Agents and Multiagent Systems.” *AI Magazine*, 27(1):103–107, 2006.
- [324] (Michael N. Huhns, Munindar P. Singh, Mark H. Burstein, Keith S. Decker, Edmund H. Durfee, Timothy W. Finin, Les Gasser, Hrishikesh J. Goradia, Nicholas R. Jennings, Kiran Lakkaraju, Hideyuki Nakashima, H. Van Dyke Parunak, Jeffrey S. Rosenschein, Alicia Ruvinsky, Gita Sukthankar, Samarth Swarup, Katia P. Sycara, Milind Tambe, Tom Wagner, and Rosa Laura Zavala Gutierrez) “Research

Directions for Service-Oriented Multiagent Systems.” *IEEE Internet Computing*, volume 9, number 6, November 2005, pages 65–70.

- [325] (Munindar P. Singh) “Business Process Management: A Killer App for Agents?” *Proceedings of the 3rd International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, New York, IEEE Press, July 2004, page 26.
- [326] (Munindar P. Singh) “Peer-to-Peer Computing for Information Systems.” *Proceedings of the International Workshop on Agents and Peer-to-Peer Computing (AP2PC)*, Bologna, July 2002.
- [327] (Munindar P. Singh) “Agents.” In Roger R. Flynn (editor) *Computer Sciences Encyclopedia*, Macmillan, Farmington Hills, Michigan, 2002.
- [328] (Munindar P. Singh) “Embedded Technology (Ubiquitous Computing).” In Roger R. Flynn (editor) *Computer Sciences Encyclopedia*, Macmillan, Farmington Hills, Michigan, 2002.
- [329] (Munindar P. Singh) “Internet Technology.” *IEEE Concurrency*, volume 8, number 1, January-March 2000, pages 79–81. This is part of a *Trend Wars* collection of interviews that appears on pages 70–81.
- [330] (Munindar P. Singh and Mona Singh) “Deconstructing the “Any” Key.” *Communications of the ACM*, volume 43, number 4, April 2000, pages 107–108.
- [331] (Munindar P. Singh, Daniel G. Bobrow, Michael N. Huhns, Margaret King, Hiroaki Kitano, and Ray Reiter) “The Next Big Thing: Position Statements.” *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, August 1997, pages 1511–1522.
- [332] (Munindar P. Singh) “Principles of Standardization.” *Foundation of Intelligent Physical Agents (FIPA)*, Palo Alto, January 1998. Position statement.
- [333] (Munindar P. Singh) “Interaction-Oriented Programming for the Web.” *2nd IFCIS International Conference on Cooperative Information Systems (CoopIS)*, Charleston, June 1997. Position statement in a panel on “Cooperative Multiagent Systems for the Web.”

3.17 Tutorial Notes

Only the major variants of the notes are included. These are handed out to the tutorial attendees and are sometimes cited in the literature.

- [334] (Munindar P. Singh and Nirmitt Desai), “Multidisciplinary Views of Business Contracts.” Tutorial notes. 2010.
- [335] (Munindar P. Singh and Michael N. Huhns) “Fundamentals of Web Services.” Tutorial notes. 2002.
- [336] (Munindar P. Singh and Michael N. Huhns) “Service Composition Techniques.” Tutorial notes. 2002.
- [337] (Munindar P. Singh and Michael N. Huhns) “Agent Technology and Electronic Commerce.” Tutorial notes. 1999.
- [338] (Munindar P. Singh and Michael N. Huhns) “Principles of Agents and Multiagent Systems: Social, Ethical, and Legal Abstractions and Reasoning.” Tutorial notes. 1999.

- [339] (Munindar P. Singh and Michael N. Huhns) “Agents and Multiagents in Information-Rich Applications.” Tutorial notes. 1997–1998.
- [340] (Michael N. Huhns and Munindar P. Singh) “Cooperative Information Systems.” Tutorial notes. 1994–1996.

3.18 Named Lecturership

- “Interaction-Oriented Programming: Agent Technology for Virtual Enterprises and Electronic Commerce.” Presentation at the Center for Communication and Information Sciences (CCIS) Lecture Series on Electronic Commerce and High Performance Computing, University of Nebraska, Lincoln, October 1997.

3.19 Invited Conference Presentations

1. “Institutions as a Basis for Service Engagements.” *AAMAS Workshop on Agent-Oriented Software Engineering (AOSE)*, Taipei, May 2011.
2. “Understanding Identity as a Social Construct: Preliminary Thoughts.” *International Conference on Service-Oriented Computing (ICSOC)*, San Francisco, December 2010.
3. “Understanding Identity: Preliminary Thoughts.” *13th International Workshop on Trust in Agent Societies*, Toronto, May 2010.
4. “Programming MAS without Programming Agents.” *7th International Workshop on Programming Multi-Agent Systems (ProMAS)*, Budapest, May 2009.
5. “Interaction-Oriented Programming: Commitments and Protocols for Business Processes.” Invited lecture at *MALLOW: Multi-Agent Logics, Languages, and Organisations–Federated Workshops*, Durham, UK, September 2007.
6. “Commitment-Based SOA.” Invited lecture at *Workshop on Agents, Web Services and Ontologies: Integrated Methodologies (Awesome)*, Durham, UK, September 2007.
7. “P2P and Service-Oriented Architectures.” *International Workshop on Agents and Peer-to-Peer Computation*, Hawaii, May 2007.
8. “Agent Organizations and Service-Oriented Computing.” *International Workshop on Coordination, Organization, Institutions and Norms in Agent Systems (COIN)*, Hawaii, May 2007.
9. “Service-Oriented Computing Roundtable.” *International Workshop on Coordination, Organization, Institutions and Norms in Agent Systems (COIN)*, Hawaii, May 2007.
10. “Interaction-Oriented Programming for Organizational Computing.” Invited panel presentation in a panel on “Organizational Computing.” *6th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Hawaii, May 2007.

11. "Interaction-Oriented Programming: Concepts, Theories, and Results on Commitment Protocols." Keynote lecture at *Australian Artificial Intelligence Conference (AI)*, Hobart, Tasmania, December 2006.
12. "Governance of Cyberinfrastructure: Motivation, Concepts, Approach, Call to Arms." Keynote lecture at *Workshop on Service Oriented Computing for e-Science*, Toronto, October 2006.
13. "Agents to Bridge the Business-IT Divide." Invited presentation in a panel on "Will Agent-Oriented Reshape IS Theory and Practice?" *International Workshop on Agent-Oriented Information Systems (AOIS)*, Hakodate, Japan, May 2006.
14. "Business Process Adaptations via Protocols." *International Workshop on Agent-Oriented Information Systems (AOIS)*, Hakodate, Japan, May 2006.
15. "An Overview of Commitment Facets and Visibility for Interorganizational Processes." *First International Workshop on Coordination of Inter-Organizational Workflows: Agent and Semantic Web Based Models (CIOW)*, Hakodate, Japan, May 2006.
16. "Understanding Policies in Commitment Protocols." *International Workshop on Declarative Agent Languages and Technologies (DALT)*, Hakodate, Japan, May 2006.
17. "From Protocols to Processes." *International Workshop on Agent-Oriented Information Systems (AOIS)*, New York, July 2004.
18. "From Protocols to Processes." *Web Services and Agent-Based Engineering*, New York, July 2004, Keynote lecture.
19. "A Pragmatics Perspective on Web Services." Joint panel session of the workshops on *Challenges in Open Agent Systems*, *Ontologies in Agent Systems*, and *Web Services and Agent-Based Engineering*, July 2003.
20. "Referrals for Reputation." *1st Interdisciplinary Symposium on Online Reputation Mechanisms*, Cambridge, Massachusetts, April 2003. Sponsored by the National Science Foundation and the MIT Center for e-Business.
21. (Munindar P. Singh and Pinar Yolum) "Trust Roundtable." *International Workshop on Agents and Peer-to-Peer Computation*, Bologna, July 2002.
22. "A Model for P2P Computation." *International Workshop on Agents and Peer-to-Peer Computation*, Bologna, July 2002.
23. "The Pragmatic Web: Preliminary Thoughts." *NSF-OntoWeb Workshop on Database and Information Systems Research for Semantic Web and Enterprises*, Amicalola Falls State Park, Georgia, April 2002.
24. (Pinar Yolum and Munindar P. Singh) "Commitment Machines." *International Workshop on Agent-Oriented Information Systems (AOIS)*, Montreal, June 2001.
25. "Agents and Multiagent Systems: Concepts and Directions." *5th International Congress on Computer Science Research*, Aguascalientes, Mexico, November 1998. Sponsored by the Mexican National Academy of Computer Science Research.

26. "The Dialectic of Practical Reasoning." *ECAI Workshop on Practical Reasoning*, Brighton, August 1998.
27. "Agent Mobility Considered Harmful." Invited presentation in a panel on "The Future of Adaptive and Mobile Information Agents- Travelling Bandits on the Information Highway, or Powerful Information Providers?" *2nd International Workshop on Cooperative Information Agents (CIA)*, Paris, July 1998.
28. "A Social View of Rationality." Invited presentation in a panel on "Is Rationality an Objective or a Subjective Notion?" *ECAI Workshop on Practical Representation and Reasoning*, Brighton, August 1998.
29. "Challenges in Empirical Studies of Multiagent Systems." Invited presentation in a panel on "Design of Computational Experiments." *ECAI Workshop on Empirical Artificial Intelligence*, Brighton, August 1998.
30. "The Dialectic of Science: Interaction-Oriented Programming Applied." *Third NSF-CONACyT Computer Science Workshop*, Universidad de las Americas, Puebla, Mexico, June 1998.
31. "Multiagent Systems in Information-Rich Environments." *2nd International Workshop on Cooperative Information Agents (CIA)*, Paris, July 1998. Invited talk.
32. "Conceptual Modeling for Multiagent Systems." *ER-97 Symposium on Conceptual Modeling: Historical Perspectives and Future Directions*, Los Angeles, November 1997. Invited talk.
33. "Challenges for Mobile Agents." *Workshop of Mobile Agents and Security (MAAS)*, Maryland Center for Telecommunications Research, University of Maryland Baltimore County, Baltimore, October 1997. Invited talk.
34. "Business Applications of Multiagent Systems." *IJCAI Workshop on Business Applications of Artificial Intelligence*, Nagoya, Japan, August 1997. Invited talk.
35. "Interaction-Oriented Programming for the Web." Invited presentation in a panel on "Cooperative Multiagent Systems for the Web." *2nd IFCIS International Conference on Cooperative Information Systems (CoopIS)*, Charleston, June 1997.
36. "Challenges to Machine Learning in Cooperative Information Systems." *ECAI Workshop on Learning in Distributed Artificial Intelligence Systems*, Budapest, August 1996. Invited talk.
37. *International Conference on Multiagent Systems (ICMAS) Workshop on Norms, Obligations, and Conventions*, Kyoto, December 1996. Invited panel presentation.
38. "Commitments in Multiagent Systems." *International Conference on Multiagent Systems (ICMAS)*, San Francisco, June 1995. Invited panel presentation.

3.20 Other Research Presentations

Some of the following were invited presentations, but not at a conference. In addition to the presentations listed below, I made presentations for several tutorials and the following papers listed above: [91], [99], [94], [95], [105], [106], [110], [115], [117], [120], [121], [122], [123], [124], [125], [127], [188], [129],

[146], [130], [131], [147], [148], [132], [149], [133], [134], [139], [140], [141], [142], [200], [205], [207], [211], [212], [218], [219], [220], [218], [220], [221], [222], [223], [224], [231], [235], and [262].

1. "Trust as a Unifying Basis for Social Computing." *Interdisciplinary Workshop on Trust*, Paris, December 2010.
2. "Trust as a Basis for Social Computing." *ARO Workshop on Social Computing*, College Park, Maryland, July 2010.
3. "Trust and Reputation in Multiagent Systems: Rational Agents and Dynamics." ARL Network Science Collaborative Technology Alliance Kick Off Meeting, Cambridge, Massachusetts, June 2010.
4. "Community Standards for Agent Communication: A Manifesto." *AAMAS Workshop on Agent Communication*, Toronto, May 2010.
5. "Trust and Reputation in Multiagent Systems: Rational Agents and Dynamics." University of Luxemburg, Luxemburg, April 2010.
6. "Governing Cross-Organizational Service Agreements: A Policy-Based Approach." Invited lecture at *Southampton University*, Southampton, UK, September 2007.
7. "Putting Services Back in Service Orientation: Commitments in Architecture and Governance." Invited lecture at *ChannelAdvisor Inc.*, Morrisville, North Carolina, June 2007.
8. "Interaction-Oriented Programming: Concepts, Theories, and Results on Commitment Protocols." Invited lecture at *IBM TJ Watson Research Laboratory*, Hawthorne, New York, November 2006.
9. "Referral Systems: Applications in Knowledge Management and Emergent Properties." Invited lecture at *Université de Montréal*, Montréal, November 2006.
10. "Referral Systems: Formulation and Emergent Properties." University of Otago, Dunedin, New Zealand, July 2006.
11. "Referral Systems: Formulation and Emergent Properties." Hewlett-Packard Research Laboratories, Palo Alto, March 2006.
12. "Commitments for Business Processes: Overview of Concepts, Protocols, Machines, Compliance." Hewlett-Packard Research Laboratories, Palo Alto, August 2002.
13. "Agents Meet Databases: Steps Toward Interaction-Oriented Programming." Presentation at the Department of Mathematical Sciences, University of North Carolina, Greensboro, April 1998.
14. "Agents Meet Databases: Introduction to Interaction-Oriented Programming." Presentation at the Center for Advanced Computing, University of Southwestern Louisiana, Lafayette, April 1998.
15. "Principles of Standardization for Agent Communication." Presentation to the 5th Meeting of the Foundation for Intelligent Physical Agents (FIPA), Palo Alto, January 1998.
16. "Steps Toward Interaction-Oriented Programming." Presentation at the Information Sciences Institute (ISI), University of Southern California, Marina del Rey, November 1997.

17. “Steps Toward Interaction-Oriented Programming.” Presentation at the NTT Communication Science Laboratories, Kyoto, August 1997.
18. “Comments on Agents and Workflows.” Presentation at IBM, RTP, North Carolina, June 1997.
19. “Considerations on Agent Communication.” Presentation to the 5th Meeting of the Foundation for Intelligent Physical Agents (FIPA), Reston, Virginia, April 1997.
20. “Agent Techniques for Open Information Environments.” Presentation in the Triangle Public Lectures Series. SAS Institute, Cary, North Carolina, February 1996.
21. International Computer Science Institute (ICSI), Berkeley, California, November 1991.
22. University of Erlangen, Nuremberg, Germany, August 1991.
23. German Research Center for Artificial Intelligence (DFKI), Kaiserslautern, Germany, July 1991.
24. German Research Center for Artificial Intelligence (DFKI), Saarbrücken, Germany, July 1991.

3.21 Impact of Scholarly Contributions

Invitations to prestigious events.

- Microsoft Research’s SemGrail Workshop, June 2007.
- Google Faculty Summit, July 2007.
- Microsoft Faculty Summit, July 2005, 2006 (declined), 2007, 2011 (declined).
- NSF IIS/GENI Workshop, November 2006.
- NSF-OntoWeb Workshop on Database and Information Systems Research for Semantic Web and Enterprises, April 2002.
- NSF Workshop on Workflow and Process Automation in Information Systems: State-of-the-art and Future Directions, April 1996.

Inclusion in collection. The following book consists of reprints of three “crucial” papers and several new contributed chapters. My paper [66] is one of the three reprinted papers.

- Marc-Philippe Huet, editor, *Communication in Multiagent Systems*, Lecture Notes in Artificial Intelligence 2650, Springer-Verlag, Berlin, 2003.

Reviews. These are published reviews of my works.

1. José M. Vidal, “Review of Gerhard Weiß (editor), *Multiagent Systems: A Modern Approach to Distributed Artificial Intelligence*.” *Autonomous Agents and Multi-Agent Systems*, volume 2, number 4, December 1999, pages 403–408. I contributed a chapter [22] to the reviewed book; this chapter is discussed on page 407 of the review.
2. Jeff White, “Review of Readings in Agents” (my book [3]). *Journal of the American Society for Information Science*, 49(14):1330–1332, December 1998.
3. Hyacinth S. Nwana, “Review of Readings in Agents” (my book [3]). *Journal of Logic and Computation*, 8(3):448–450, June 1998.

4 Professional Activities

4.1 Service on Expert Panels

- Member, Strategy Workshop, ARO Computing Sciences Division, May 2011.
- Member, expert panel on *Ensuring Cross-Enterprise Semantic Interoperability in Synoptic (Templated) Clinical Reporting*. Sponsored by the Office of the Assistant Secretary for Planning & Evaluation (ASPE) (US Department of Health and Human Services) and the Pathology Electronic Reporting Committee of the College of American Pathologists. 2008–2009.

4.2 Editorial Activities

1. Member of the Editorial Board, *Journal of Artificial Intelligence Research*, July 2011–June 2014. Published by AI Access Foundation.
2. Charter Member of the Editorial Board, *Journal of Service Oriented Computing and Applications*, June 2006–December 2010. Published by Springer.
3. Charter Member of the Editorial Board, *International Journal of Agent-Oriented Software Engineering (IJAOSE)*, March 2005–February 2011. Published from 2006 by Inderscience.
4. Charter Member of the Editorial Board, *Journal of Web Semantics: Science, Services and Agents on the World Wide Web*, October 2002–present (began publication in 2003). Published by Elsevier.
5. Editor-in-Chief, *IEEE Internet Computing*, January 1999–December 2002. Associate Editor-in-Chief, *IEEE Internet Computing*, January 1998–December 1998. Charter Member of the Editorial Board, December 1996–December 1997 (first published January 1997) and January 2003–present. URL: <http://www.computer.org/internet/>
6. Charter Member of the Editorial Board, *Journal of Autonomous Agents and Multiagent Systems*, November 1997–present (first appeared July 1998). Published by Springer.
7. Guest Editorships:

- (with Rino Falcone) *ACM Transactions on Intelligent Systems and Technology*, special theme on *Trust in Multiagent Systems*.
- (with Vinton G. Cerf) *IEEE Internet Computing*, special theme on *Internet Predictions*, volume 14, number 1, January-February 2010, pages 10–42.
- (with Matei Ripeanu and Sudharshan Vazhkudai) *IEEE Internet Computing*, special theme on *Virtual Organizations*, volume 12, number 2, March-April 2008, pages 10–36.
- *IEEE Internet Computing*, *Spotlight* department, volumes 11 and 12, 2007–2008. This department consists of an article in each issue that introduces a relevant technology.
- *IEEE Internet Computing*, track on *Service-Oriented Computing*, volume 9, 2005. The track consisted of an article in each issue of this volume.
- (with Michael Fisher, Diana Spears, Michael Wooldridge) *Journal of Applied Logic*, special issue on *Logics for Multiagent Systems*, volume 5, number 2, June 2007, pages 193–388.
- *Communications of the ACM (CACM)*, special section on *Multiagent Systems on the Net*, volume 42, number 3, March 1999.
- *International Journal of Cooperative Information Systems (IJCIS)*, special issue on *Selected Papers from CoopIS-97*, volume 6, numbers 3 and 4, September and December 1997.
- *IEEE Internet Computing*, theme issue on *Agents*, volume 1, number 4, August 1997.
- *International Journal of Cooperative Information Systems (IJCIS)*, special issues on *Formal Methods in Cooperative Information Systems* with the following themes: *Heterogeneous Databases*, volume 5, number 4, December 1996; *Multiagent Systems*, volume 6, number 1, January 1997.

4.3 Events Organized or Chaired

1. Program Cochair, Sixth International Conference on Web Services (ICWS), Beijing, 2008.
2. Program Cochair, Third International Workshop on Normative Multiagent Systems (NorMAS), Luxembourg, 2008.
3. Member, Organizing Committee, International Workshop on Trust, Privacy, Deception, and Fraud, New York, 2001–2004, 2006–2011.
4. General Cochair, Fourth International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS), Utrecht, The Netherlands, July 2005.
5. Finance Chair, Third International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS), New York, July 2004.
6. Program Cochair, Second International Workshop on Agents and Peer-to-Peer Computing (AP2PC), Melbourne, 2003.
7. Member, Organizing International Workshop on Regulated Agent-Based Social Systems: Theories and Applications (RASTA), 2002.

8. Program Cochair, Autonomous Agents Workshop on Deception, Fraud and Trust in Agent Societies, June 2000.
9. Tutorial Program Chair, Fourth International Conference on Multiagent Systems (ICMAS), July 2000.
10. Program Chair (Americas), Fifth International Workshop on Agent Theories, Architectures, and Languages (ATAL), July 1998.
11. General Chair and Americas Program Chair, Fourth International Workshop on Agent Theories, Architectures, and Languages (ATAL), July 1997.
12. Program Chair (Americas), Second IFCIS International Conference on Cooperative Information Systems (CoopIS), June 1997.

4.4 Steering Committee Memberships

1. Member, Steering Committee for PRIMA and Advisory Committee of PRIMA 2010.
2. Member, Board of Directors, International Foundation for Autonomous Agents and Multiagent Systems (IFAAMAS), 2007–present.
3. Member, Board of Directors, International Foundation for Multiagent Systems (IFMAS), 2004–2006.
4. Chair, Editor-in-Chief Search Committee, *IEEE Internet Computing*, 2003–2004.
5. Steering Committee, *IEEE Transactions on Mobile Computing*, 2001–2004.
6. Steering Committee, International Workshop on Agent Theories, Architectures, and Languages (ATAL), 1999–2007. ATAL was dissolved and merged into IFAAMAS, which was constituted at the same time.
7. IEEE Computer Society Magazine Operations Committee, 1999–2002.
8. IEEE Computer Society Publications Board, 1999–2002.

4.5 Tenure and Promotion Reviewing

1. The promotion case of a faculty member at a university in Greece: 2010.
2. The tenure and promotion case of a faculty member at a university in Arizona: 2008, 2010.
3. The professorship case of a faculty member at a university in Kansas: 2010.
4. The professorship case of a faculty member at a university in Maryland: 2010.
5. The tenure and professorship case of a faculty member at a university in Michigan: 2008, 2009.
6. A Deanship candidate at a university in North Carolina: 2009.
7. The tenure and promotion case of a faculty member at a major liberal arts college in the Northeast: 2009.

8. The tenure and promotion case of a faculty member at a university in North Carolina: 2008.
9. The professorship case of a faculty member at a university in the Washington, DC area: 2008.
10. The tenure case of a faculty member at one of the universities in Saskatchewan, Canada: 2007.
11. A full professor appointment at a university in Scotland: 2007.
12. The tenure and promotion case of a faculty member at a university in New York: 2007.
13. The tenure and promotion case of a faculty member at a university in the Washington, DC area: 2005.
14. The tenure and promotion case of a faculty member at a university in Arkansas: 2004.
15. The professorship case of a faculty member at a university in Oklahoma: 2003.
16. The tenure and promotion case of a faculty member at a university in South Carolina: 2003.
17. A scientist at the Research Institute for Advanced Computer Science (RIACS), NASA Ames Research Center, California: 2000, 2002.
18. A Cisco Fellow promotion case, Cisco: 2001.
19. The tenure case of a faculty member at one of the universities in Pennsylvania: 2000.
20. The tenure case of a faculty member at one of the universities in Ontario, Canada: 1999.
21. The reappointment case of a faculty member at one of the campuses of the University of North Carolina System: 1998.

4.6 Research Proposal Reviewing

The following include my reviewing activities for research funding agencies in the US and abroad.

1. Reviewer for the Austrian Science Fund, Austria: 1999, 2003, 2011.
2. Reviewer for the Natural Sciences and Engineering Research Council, Canada: 2003, 2004, 2005, 2007, 2009.
3. Reviewer for the Research Grants Council, University Grants Committee, Hong Kong, 1998, 2000–2011.
4. Reviewer for the Swiss Natural Science Foundation: 2007, 2008.
5. Reviewer for the European Science Foundation: 2007, 2009.
6. Reviewer for the Israel Science Foundation: 2007.
7. Member of a proposal-review panel in the Division of Computer and Network Systems, National Science Foundation: 2008.

8. Member of a proposal-review panel in the Division of Information and Intelligent Systems (and its precursor division), National Science Foundation: 1996, 1998, 1999, 2001, 2002, 2004, 2007, 2008.
9. Reviewer for the Division of Information and Intelligent Systems, Natural Science Foundation: 2006.
10. Reviewer for the Army Research Office: 2006.
11. Reviewer for the US-Israeli Bi-national Science Foundation (BSF): 2005.
12. Reviewer for the Small Business Innovation Research (SBIR) grants program, National Science Foundation: 2002, 2004.
13. Reviewer for the Kansas First Award program, administered by the American Association for the Advancement of Science: 2002.
14. Member of proposal-review panel for proposals to the Information Technology Research Program, National Science Foundation: 2001 (preproposals and proposals), 2002 (two).
15. Reviewer for the Australian Research Council, Australia: 2001.
16. Reviewer for the Directorate for Biological Sciences (a part of the database activities of the Division for Biological Instrumentation and Resources), National Science Foundation: 1997.
17. Reviewer for the Division of International Programs, National Science Foundation: 1996.
18. Member of a site-review committee (of an industry-university research center) for the Division of Engineering Education and Centers, a division in the Directorate for Engineering, National Science Foundation: 1995.

4.7 Dissertation Reviewing

1. External reviewer for the Ph.D. dissertation award of the Italian Association for Logic Programming, 2009.
2. External member of the Ph.D. committee for Weimao Ke, School of Information and Library Science, University of North Carolina, Chapel Hill, 2009–present. *Advisor:* Dr. Javed Mostafa.
3. External member of the Ph.D. committee for Jie Zhang, Department of Computer Science, University of Waterloo, Waterloo, Canada, 2009. *Advisor:* Dr. Robin Cohen.
4. External examiner for the Ph.D. dissertation of Manish Malhotra, Department of Computer Science, Royal Melbourne Institute of Technology, Melbourne, 2009. *Advisor:* Dr. Andrew Jennings.
5. External member of the Ph.D. committee for Viji Avali, Department of Computer Science and Engineering, University of South Carolina, Columbia, 2008–present. *Advisor:* Dr. Michael N. Huhns.
6. External member of the Ph.D. committee for Li Xiong, College of Computing, Georgia Institute of Technology, Atlanta, 2004–2005. *Advisor:* Dr. Ling Liu.
7. External examiner for the Ph.D. dissertation of Elizabeth Ogston, Vrije Universiteit, Amsterdam, 2004–2005. *Advisors:* Dr. Frances Brazier and Dr. Maarten van Steen.

8. External examiner for the Ph.D. dissertation of Gil Tidhar, *Organization-Oriented Systems: Theory and Practice*, Department of Computer Science, University of Melbourne, Melbourne, 1998. *Advisors*: Dr. Elizabeth A. Sonenberg and Dr. Anand S. Rao.
9. External member of the Ph.D. committee for Marlene D. Morris, *Turning Browsers Into Buyers: Influencing Consumers—Preference Construction and Timing of Product Purchase*, Fuqua School of Business, Duke University, Durham, NC, 1998. *Advisors*: Dr. James Bettman and Dr. John Payne.

4.8 Panels Chaired

1. “Business Process Management: A Killer App for Agents?” *Third International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, New York, July 2004.
2. “Mind Your P’s: Processes, Policies, and Protocols.” *Thirteenth International Conference on the World-Wide Web (WWW)*, New York, May 2004.
3. “Conducting Business using Peer-to-Peer Computing.” *Third International Workshop on Agents and Peer-to-Peer Computing (AP2PC)*, New York, July 2004.
4. “Future of Multiagent Systems.” *Third International Conference on Multiagent Systems (ICMAS)*, Boston, July 2000.
5. “Standards.” *Third International Conference on Multiagent Systems (ICMAS)*, Paris, July 1998.
6. “The Next Big Thing.” *International Joint Conference on Artificial Intelligence (IJCAI)*, Nagoya, Japan, August 1997.

4.9 Participation as Invited Panelist

1. (Claudio Bartolini, chair) “Web Service Integration in the Context of Social Systems.” *International Conference on Service-Oriented Computing (ICSOC)*, San Francisco, December 2010.
2. (K. Suzanne Barber, chair) “Identity and Trust from Different Points of View.” *International Workshop on Trust in Agent Societies*, Toronto, May 2010.
3. (Rino Falcone, chair) “Challenges and Trends in Trust Research.” *International Workshop on Trust in Agent Societies*, Budapest, May 2009.
4. (Carl Hewitt, chair) “Organizational Computing.” *6th International Joint Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, Hawaii, May 2007.
5. (Aditya Ghose, chair) “Will Agent-Oriented Reshape IS Theory and Practice?” *International Workshop on Agent-Oriented Information Systems (AOIS)*, Hakodate, Japan, May 2006.
6. (K. Suzanne Barber, chair) “Trust Competition Testbed Panel.” *AAMAS Trust Workshop*, New York, July 2004. My talk was on “The Trust Competition Testbed: Some Key Requirements.”
7. (David Martin, chair) “Agent Technology and Web Services Standards.” Joint panel session of the workshops on *Challenges in Open Agent Systems*, *Ontologies in Agent Systems*, and *Web Services and Agent-Based Engineering*, July 2003.

8. (Aris Ousksel, chair) “Agents and Peer-to-Peer Computing.” *AAMAS Workshop on Agents and Peer-to-Peer Computing*, Bologna, July 2002.
9. (John Bell, chair) “Is Rationality an Objective or a Subjective Notion?” *ECAI Workshop on Practical Representation and Reasoning*, Brighton, August 1998.
10. (Ian Gent, chair) “Design of Computational Experiments.” *ECAI Workshop on Empirical Artificial Intelligence*, Brighton, August 1998.
11. (Gerhard Weiß, chair) “The Future of Adaptive and Mobile Information Agents-Traveling Bandits on the Information Highway, or Powerful Information Providers?” *2nd International Workshop on Cooperative Information Agents (CIA)*, Paris, July 1998.
12. (Anupam Joshi, chair) “Cooperative Multiagent Systems for the Web.” *2nd IFCIS International Conference on Cooperative Information Systems (CoopIS)*, Kiawah Island, South Carolina, June 1997.
13. (Nick Jennings and Rosaria Conte, chairs) “Agents and Norms.” *International Conference on Multi-agent Systems (ICMAS) Workshop on Norms, Obligations, and Conventions*, Kyoto, December 1996.
14. (Cristiano Castelfranchi, chair) “Agents and Commitments.” *International Conference on Multiagent Systems (ICMAS)*, San Francisco, June 1995.

4.10 Magazine Columns

1. (Munindar P. Singh) “Being Interactive.” Bimonthly column, *IEEE Internet Computing*, January 1999–December 2002.
2. (Michael N. Huhns and Munindar P. Singh) “Agents on the Web.” Bimonthly column, *IEEE Internet Computing*, 1997–1998.

4.11 Conference Tutorials

1. (Munindar P. Singh and Nirmal Desai), “Multidisciplinary Views of Business Contracts.” *Eighth International Conference on Service-Oriented Computing (ICSOC)*, December 2010.
2. (Munindar P. Singh and Michael N. Huhns) “Agents for Web Services.” *International Joint Conference on Artificial Intelligence (IJCAI)*, Hyderabad, January 2007.
3. (Munindar P. Singh and Michael N. Huhns) “Service-Oriented Computing.” *Nineteenth Annual ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, Vancouver, October 2004.
4. (Munindar P. Singh and Michael N. Huhns) “Agents for Web Services.” *Third International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, New York, July 2004.
5. (Munindar P. Singh and Michael N. Huhns) “Foundations of Web Services: Architectures, Description and Engagement.” *Thirteenth International World Wide Web Conference (WWW)*, New York, May 2004.

6. (Munindar P. Singh and Michael N. Huhns) "Foundations of Web Services: Engagement, Discovery and Composition." *Thirteenth International World Wide Web Conference (WWW)*, New York, May 2004.
7. (Munindar P. Singh and Michael N. Huhns) "Web Service Composition and Service Composition Techniques." *Second International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, Melbourne, July 2003.
8. (Munindar P. Singh and Michael N. Huhns) "Fundamentals of Web Services." *First International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, Bologna, July 2002.
9. (Munindar P. Singh and Michael N. Huhns) "Web Service Composition." *Eleventh International World Wide Web Conference (WWW)*, Honolulu, May 2002.
10. (Munindar P. Singh and Michael N. Huhns) "Service Composition Techniques." *Eleventh International World Wide Web Conference (WWW)*, Honolulu, May 2002.
11. (Munindar P. Singh and Michael N. Huhns) "Principles of Agents and Multiagent Systems: Social, Ethical, and Legal Abstractions and Reasoning." *International Joint Conference on Artificial Intelligence (IJCAI)*, Stockholm, July 1999.
12. (Michael N. Huhns and Munindar P. Singh) "Agents and Multiagents in the Internet and Intranets." *International Joint Conference on Artificial Intelligence (IJCAI)*, Stockholm, July 1999.
13. (Munindar P. Singh and Michael N. Huhns) "Agents and Multiagents in Information-Rich Applications." *International Conference on Multiagent Systems (ICMAS)*, Paris, July 1998.
14. (Munindar P. Singh and Michael N. Huhns) "Cooperative Information Systems: Agents Meet Databases." *International Joint Conference on Artificial Intelligence (IJCAI)*, Nagoya, Japan, August 1997.
15. (Munindar P. Singh and Michael N. Huhns) "Cooperative Information Systems." *European Conference on Artificial Intelligence (ECAI)*, Budapest, August 1996.
16. (Munindar P. Singh and Michael N. Huhns) "Agents at Work: Promises, Paradigms, Problems." *IEEE International Conference on Data Engineering (ICDE)*, New Orleans, February 1996.
17. (Michael N. Huhns and Munindar P. Singh) "Cooperative Information Systems." *International Joint Conference on Artificial Intelligence (IJCAI)*, Montreal, August 1995.
18. (Munindar P. Singh and Michael N. Huhns) "Cooperative Information Systems." *IEEE International Conference on Distributed Computing Systems (ICDCS)*, Vancouver, May 1995.
19. (Munindar P. Singh and Michael N. Huhns) "Cooperative Information Systems." *International Conference on Management of Data (COMAD)*, Bangalore, December 1994.
20. (Michael N. Huhns and Munindar P. Singh) "Distributed Artificial Intelligence." *International Conference on Cooperative Information Systems (CoopIS)*, Toronto, May 1994.

4.12 Conference Senior Program Committee Memberships

1. Senior Program Committee, International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS), Hawaii: 2002, 2003, 2007, 2008, 2011, 2012.
2. Senior Program Committee, AAAI Conference on Artificial Intelligence (AAAI): 2012.
3. Senior Program Committee, International Conference on Principles and Practice of Multi-Agent Systems, 2010, 2011.
4. Senior Program Committee, International Joint Conference on Artificial Intelligence (IJCAI): 2009.
5. Area Chair for *Internet Technology and Informatics*, International Symposium on Parallel Architectures, Algorithms, and Networks (ISPAN), Melbourne: 2008.
6. Area Coordinator for *Service Assembly*, International Conference on Service Oriented Computing (ICSOC): 2006.
7. Program Vice Chair, *Internet and Web Computing*, IEEE International Conference on Distributed Computing Systems (ICDCS), Columbus, Ohio, June 2005.

4.13 Conference Program Committee Memberships

1. International Conference on Web Services (ICWS): 2004, 2006, 2007, 2010, 2011.
2. IEEE Conference on Commerce and Enterprise Computing (CEC), 2011.
3. International Conference on Service Oriented Computing (ICSOC): 2004, 2008, 2010.
4. International Conference on Semantic Systems (ISEM): 2010.
5. International Conference on Business Information Systems (BIS): 2010.
6. International Conference on Electronic Commerce (ICEC): 2007, 2008, 2010.
7. International Conference on Knowledge Representation (KR): 2010.
8. European Semantic Web Conference (ESWC): 2007, 2008, 2009.
9. International Conference on Autonomous Agents and Multiagent Systems (AAMAS): 2009.
10. World Wide Web Conference (WWW): 2008, 2009.
11. IEEE International Conference on High Performance Computing and Communications (HPCC): 2009.
12. International Semantic Web Conference (ISWC): 2003, 2006, 2008.
13. AAAI Conference on Artificial Intelligence, Nectar Papers Program Committee, (AAAI): 2006, 2007, 2008.
14. AAAI Conference on Artificial Intelligence (AAAI): 1994, 2007, 2008.

15. IEEE/WIC International Conference on Intelligent Agent Technology (IAT): 2003, 2007.
16. International Conference on Autonomous Agents (AA): 1997, 1998, 1999, 2001.
17. Third International and Interdisciplinary Conference on Modeling and Using Context (CONTEXT): 1999, 2001.
18. International Conference on Multiagent Systems (ICMAS): 1996, 1998, 2000.
19. IEEE International Conference on Distributed Computing Systems (ICDCS): 1998.
20. Third IFCIS International Conference on Cooperative Information Systems (CoopIS): 1996, 1998.
21. Fourteenth IEEE International Conference on Data Engineering (ICDE): 1998.
22. Third International Conference on Cooperating Knowledge-Based Systems: 1994.

4.14 Symposia and Workshop Program Committee Memberships

1. SPLASH Workshop on Programming Systems, Languages, and Applications based on Agents, Actors, and Decentralized Control (AGERE!), 2011.
2. Informatik Workshop on Protocol based Modelling of Business Interactions (PMBI), 2011.
3. International Workshop on Programming Multiagent Systems (ProMAS): 2010, 2011.
4. International Workshop on Coordination, Organization, Institutions and Norms in Agent Systems (COIN): 2010, 2011.
5. International Workshop on Multi-Agent Systems and Collaborative Technologies: 2011, 2011.
6. International Pragmatic Web Conference Track at I-SEMANTICS (PragWEB): 2010.
7. International Workshop on Agent Communication (AC): 2010.
8. International Workshop on Service-Oriented Computing: Agents, Semantics, and Engineering (SO-CASE): 2010.
9. International Conference on the Virtual Computing Initiative, (ICVCI): 2007, 2008, 2009.
10. International Workshop on Agents, Web Services and Ontologies, Integrated Methodologies (AWE-SOME) as part of Multi-Agent Logics, Languages, and Organisations Federated Workshops (MAL-LOW): 2009.
11. IEEE International Workshop on Scientific Workflows (SWF): 2008, 2009.
12. International Workshop on Agents for Autonomic Computing (AAC): 2008, 2009.
13. International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS): 2009.
14. International Conference on Reputation (ICORE): 2009.

15. International Conference on Computer Mediated Social Networking (ICCMSN): 2008.
16. Workshop on Community-Based Evolution of Knowledge-intensive Systems (COMBEK): 2008.
17. European Workshop on Multi-Agent Systems (EUMAS): 2007.
18. International Workshop on Declarative Agent Languages and Technologies (DALT): 2007.
19. Workshop on Global Service Delivery Platforms at the Conference on Electronic Commerce: 2006.
20. International Workshop on Coordination of Inter-Organizational Workflow: Agent and Semantic Web Based Models (CIOW): 2006.
21. International Workshop on Artificial Intelligence and Service-Oriented Computing: 2006.
22. First Workshop on Semantics Enabled Networks and Services (SeNS): 2006.
23. 5th International Workshop on Engineering Societies in the Agents' World (ESAW): 2001, 2003, 2004.
24. VLDB Workshop on Semantic Web and Databases: 2003.
25. First International Workshop on Computational Autonomy– Potential, Risks, Solutions (AUTONOMY): 2003.
26. Third International Symposium on Electronic Commerce (ISEC): October 2002.
27. First International Workshop on Internet Computing and E-Commerce (ICEC): 2001.
28. FORTE/PSTV Workshop on Interaction Protocol Engineering: 2002.
29. Third IEEE/IPSJ Symposium on Applications and the Internet (SAINT): 2003. Sponsored by the IEEE Computer Society and the Information Processing Society of Japan.
30. Agent Communication Languages and Conversation Policies, Autonomous Agents and Multi-Agent Systems Conference: 2002.
31. ECAI Workshop on Model Checking and Artificial Intelligence (MoChArt): 2002.
32. Sixth International Workshop on Cooperative Information Agents (CIA): 2001, 2002.
33. Seventh International Workshop on Agent Theories, Architectures, and Languages (ATAL): 1994, 1999, 2000, 2001.
34. Autonomous Agents Workshop on Agent Communication: 2000.
35. Autonomous Agents Workshop on Norms and Institutions in Multi-Agent Systems: 2000.
36. AAI Workshop on Negotiation: Settling Conflicts and Identifying Opportunities: 1999.
37. AAI Workshop on Agents' Conflicts: 1999.

38. Third Workshop on the Semantics and Pragmatics of Dialogue (Amsteloog): 1999.
39. IJCAI Workshop on Agent Communication Languages: 1999.
40. International Conference on Autonomous Agents Workshop on Deception, Fraud and Trust in Agent Societies: 1999.
41. International Conference on Autonomous Agents Workshop on Specifying and Implementing Conversation Policies: 1999.
42. International Workshop on Intelligent Agents for Telecommunications Applications (IATA): 1998.
43. International Conference on Autonomous Agents Workshop on Deception, Fraud and Trust in Agent Societies: 1998.
44. International Workshop on Intelligent Agents on the Internet and Web: 1998.
45. Second International Workshop on Cooperative Information Agents (CIA): 1998.
46. Workshop on Theoretical and Practical Foundations of Intelligent Agents: 1997.
47. International Conference on Multiagent Systems Workshop on Norms, Obligations, and Conventions: 1996.
48. First Workshop on Theoretical and Practical Foundations of Intelligent Agents: 1996.
49. European Conference on Artificial Intelligence Workshop on Agent Theories, Architectures, and Languages (ATAL): 1996.
50. International Joint Conference on Artificial Intelligence Workshop on Agent Theories, Architectures, and Languages (ATAL): 1995.
51. European Conference on Artificial Intelligence Workshop on Agent Theories, Architectures, and Languages (ATAL): 1994.

4.15 Book Publisher Reviewing

1. Undergraduate textbook proposal on agent programming, Wiley, 2005.
2. Research monograph proposal on multiagent systems, Wiley, 2005.
3. Undergraduate textbook manuscript on databases, Addison Wesley, 2004.
4. Undergraduate textbook manuscript on databases, Addison Wesley Longman, 2001.
5. Undergraduate textbook manuscript on databases, Prentice Hall, 2001.
6. Edited research collection proposal, John Wiley & Sons, 2000.
7. Undergraduate textbook proposal on data structures, Addison Wesley Longman, 2000.
8. Undergraduate textbook manuscript on databases, Addison Wesley Longman, 2000.

9. Proposed undergraduate textbook on databases, Addison Wesley Longman, 2000.
10. Proposed undergraduate textbook on data structures, McGraw-Hill, 1999.
11. Proposed undergraduate textbook on data structures, Prentice Hall, 1999.
12. Proposed undergraduate textbook on databases, Addison Wesley Longman, 1999.
13. The *Encyclopedia of Electrical and Electronics Engineering*, John Wiley & Sons, 1998.
14. Proposed 2nd edition of an undergraduate textbook on databases, Addison Wesley Longman, 1998.
15. Book proposal for the *International Series on Advances in Database Systems*, Kluwer, 1997.

4.16 Other Reviewing

Journal Reviewing These do not include the journals for which I am an editorial board member.

1. *Computational Intelligence (CI)*, Basil Blackwell. Founded by the National Research Council of Canada (NRCC): 2004, 2008, 2011.
2. *Artificial Intelligence*, Elsevier: 2010.
3. *Journal of AI Research*, JAIR Foundation: 2006, 2007, 2010.
4. *ACM Transactions on the Web (TWEB)*, ACM: 2007, 2008, 2010.
5. *IEEE Transactions on Dependable and Secure Computing (TDSC)*, IEEE: 2010, 2011.
6. *MIS Quarterly*: 2009, 2010.
7. *Decision-Support Systems*: 2009, 2010.
8. *ACM Transactions on Autonomous and Adaptive Systems (TAAS)*, ACM, 2010.
9. *IEEE Computer*, IEEE: 2007, 2010.
10. *Mind*, 2010.
11. *International Journal of Parallel, Emergent and Distributed Systems*, Taylor & Francis, 2010.
12. *ACM Transactions on Internet Technology (TOIT)*, ACM: 2006, 2009.
13. *IEEE Transactions on Services Computing (TSC)*, IEEE: 2008, 2009.
14. *IEEE Transactions on Software Engineering (TSE)*, IEEE: 2004, 2009.
15. *WWW Journal*, Springer: 2008, 2009.
16. *IEEE Transactions on Knowledge and Data Engineering*, IEEE: 2003, 2004, 2008.
17. *IEEE Transactions on Systems, Man, and Cybernetics, Part A (TSMC-A)*: 2008.

18. *IEEE Transactions on Systems, Man, and Cybernetics, Part C (TSMC-C)*: 2006, 2008.
19. *Multi-Agent and Grid Systems*, IOS Press: 2008.
20. *Journal of Computer Security*, IOS Press: 2008.
21. *Communications of the ACM (CACM)*, ACM: 2002, 2004, 2006, 2008.
22. *Frontiers of Computer Science in China*, Springer: 2007.
23. *IEEE Software*, IEEE: 2007.
24. *ACM Computing Surveys*: 2007.
25. *IBM Systems Journal*: 2007.
26. *AI Journal*, Elsevier: 2007.
27. *VLDB Journal*, VLDB Foundation: 2007.
28. *Web Intelligence and Agent Systems*: 2007.
29. *ACM Transactions on Computational Logic*, ACM: 2005, 2006.
30. *IEEE Transactions on Parallel and Distributed Systems*, IEEE.
31. *Theoretical Computer Science*, Elsevier.
32. *IEE Proceedings—Software*: 2001. IEE is the Institute of Electrical Engineers.
33. *Information Technology and Management*, Baltzer.
34. *IBM Systems Journal*, IBM.
35. *Information Systems—Databases: Their Creation, Management and Utilization*, Pergamon.
36. *Computers and Artificial Intelligence*, Slovak Academy of Sciences.
37. *Journal of Intelligent Information Systems*, Kluwer.
38. *Knowledge and Information Systems (KAIS): An International Journal*, Springer-Verlag.
39. *Applied Artificial Intelligence: An International Journal*, Taylor & Francis.
40. *IEEE Transactions on Pattern Analysis and Machine Intelligence (IEEE-PAMI)*, Institute of Electrical and Electronics Engineers Computer Society.
41. *Journal of Logic and Computation*, Oxford University Press.
42. *Trends in Cognitive Science*, Elsevier.
43. *Machine Learning*, Kluwer.

44. *Journal of Computing and Information Technology (CIT)*, University of Zagreb, Croatia. ISSN 1330-1136.
45. *Journal of Experimental and Theoretical Artificial Intelligence (JETAI)*, Taylor & Francis.
46. *Distributed and Parallel Databases (DAPD)*, Kluwer.
47. *Computers and Mathematics with Applications (CAM)*, Pergamon Press.
48. *ACM Transactions on Information Systems (TOIS)*, ACM.
49. *IEEE Expert: Intelligent Systems & Their Applications*, Institute of Electrical and Electronics Engineers Computer Society.
50. *International Journal of Cooperative Information Systems (IJCIS)*, World Scientific.
51. *IEEE Transactions on Systems, Man, and Cybernetics (IEEE-SMC)*, Institute of Electrical and Electronics Engineers Computer Society.
52. *International Journal of Intelligent Systems (IJIS)*, John Wiley.
53. *Journal of Organizational Computing (JOC)*, Ablex.
54. *Journal of Applied Intelligence (APIN)*, Kluwer.

Conference Reviewing These do not include the conferences for which I was a program committee member.

1. International ACM Conference on Electronic Commerce (EC): 1999, 2008.
2. International Joint Conference on Artificial Intelligence (IJCAI): 1991, 1993, 1995, 1997, 1999, 2001, and 2003.
3. ACM Symposium on the Principles of Distributed Computing, 2000.
4. 7th CSLI Workshop on Logic, Language and Computation (LLC): 1998.
5. IEEE Symposium on Logic in Computer Science (LICS): 1995.
6. International Conference on Database Systems for Advanced Applications (DASFAA): 1995.
7. Conference of the American Association for Artificial Intelligence (AAAI): 1990.
8. International Conference on Data Engineering (ICDE): 1994.
9. International Conference on Intelligent and Cooperative Information Systems (ICICIS): 1993.
10. International Conference on Distributed Artificial Intelligence (DAI): 1990 and 1992.
11. International Conference on Logic Programming Workshop on Deductive Databases: 1993.
12. International Workshop on Cooperation Among Knowledge-Based Systems (CKBS): 1990.

13. International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems (IEA/AIE): 1991.
14. American Association for Artificial Intelligence Workshop on Cooperation Among Heterogeneous Intelligent Systems (CHIS): 1991 and 1992.