

Curriculum Vitae and List of Publications• **Personal Details**

	Ronen Brafman
Date and place of birth:	23/12/64 Israel
Address at work:	Department of Computer Science Ben Gurion University of the Negev Beer-Sheva, 84105 (08) 642-8041
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• **Education**

B.A. - 1986-1989 Hebrew University of Jerusalem,  
Mathematics and Physics (Magna Cum Laude).

M.Sc. - 1989-1991 Hebrew University of Jerusalem,  
Computer Science (Summa Cum Laude).  
Thesis title: "A First-Order Logic of Normality: Predicate Calculus with Assertions". Supervisor: Prof. Menachem Magidor.

Ph.D. - 1991-1996 Stanford University.  
Computer Science.  
Thesis title: "Qualitative Models of Information and Decision Making: Foundations and Applications." Supervisor: Prof. Yoav Shoham.

• **Employment History**

[Jan. 1992 – Dec. 1996] Research assistant. Stanford University, Robotics Lab, Stanford, California.

[Jan. 1996 – Sep. 1997] Postdoctoral Fellow. University of British Columbia, Department of Computer Science, Vancouver, B.C., Canada.

[Sep. 1997 – Sep. 2001] Lecturer. Ben-Gurion University, Department of Computer Science, Beer-Sheva, Israel.

[Oct. 2001 – Nov. 2004] Senior Lecturer. Ben-Gurion University, Department of Computer Science, Beer-Sheva, Israel.

[Sep. 2004 – June 2005] Visiting Research Scientist. NASA Ames Research Center, Moffet Field, CA, USA.

[Sep. 2004 – Sep. 2006] Visiting Associate Professor. Stanford University, Department of Computer Science, Stanford, CA, USA.

[Oct. 2004 – ] Associate Professor. Ben-Gurion University, Department of Computer Science, Beer-Sheva, Israel.

- **Professional Activities**

- (a) Positions in academic administration

- [1997 – 2003] Student Advisor. Ben-Gurion University, Department of Computer Science.

- [1997 – 2001] Representative to the Faculty of Natural Science’s Safety Committee.

- [1997 – 1998] Computer Science Seminar Coordinator.

- [1999 – 2002] Computer Science Department Coordinator for the “Best-to-Industry in the Negev” Program.

- [2001 – 2002] Room Assignment Coordinator, Computer Science Department.

- [2002 – 2003] Excellent Student Program Coordinator, Computer Science Department.

- [2004] Chair, Frankel Fund Grant Allocation Committee, Computer Science Department.

- [2006–] Member, CS Department’s Appointments Committee.

- [2006–2008] Industry Relations Coordinator.

- [2008–2008] BGU coordinator of joint program with Microsoft.

- [2008–] Chair, department of computer science.

- (c) Professional functions outside universities

- [July 2000 – July 2001] Director of Technology. ItemField, Tel-Aviv, Israel. Area: Tools for automatically extracting and transforming content.

- [November 2000 – February 2002] Consultant. IbotSoft, Hertzelia, Israel. Area: Enterprise application integration and business process modeling and integration.

- [May 2002 – May 2003] Chief Scientist, ModusNovo, Israel. Area: Business activity monitoring.

- [Jan 2004 – Dec 2004] Consultant, Nipendo, Israel. Area: Enterprise application integration and business process modeling and integration.

- [April 2005 – Sep 2006] Consultant, Shopping.Com/e-Bay, USA. Area: modeling and elicitation of consumer preferences.

- [July 2005 – Aug 2006] Consultant, NASA Ames Research Center (through University Space Research Association’s Research Institute in Computer Science), USA. Area: decision-theoretic planning for autonomous planetary exploration.

- [Nov 2006 – May 2008] Chief Scientist, Nipendo, Israel. Area: Support for Enterprise application integration and transaction processing.

- (d) Editor or member of editorial board of scientific journals

- [1998 – ] Editorial board member *Electronic Transactions on Artificial Intelligence* in the area of Decisions and Reasoning under Uncertainty.

- [January 1999 – December 2001] Editorial board member *Journal of Artificial Intelligence Research*.

- (\*) [October 2005 – September 2011] Associate Editor *Journal of Artificial Intelligence Research*.

- (\*) [January 2007 – December 2010] Editorial Board Member *Artificial Intelligence Journal*.

- **Educational activities**

(a) Courses taught

- [Spring 2008] “Introduction to Machine Learning”, Ben-Gurion University.
- [Spring 2007] “Advanced Research Seminar in AI”, Ben-Gurion University.
- [Fall 2006,2007] “Automata and Formal Languages”, Ben-Gurion University.
- [Fall 2006] “Topics in Artificial Intelligence”, Ben-Gurion University.
- [Spring 2004] “Preferences and Optimal Choice”, Ben-Gurion University.
- [Spring 2004] “Graduate Research Seminar in AI”, Ben-Gurion University.
- [Spring 2003 ] “Topics in the Frontier of Computer Science for Excellent Students”, Ben-Gurion University.
- [Summer 2002, Spring 2004] “Mini-Project Course: Topics in Constraint Satisfaction – SAT Simplification Methods”, Ben-Gurion University.
- [Spring 2002] “Mini-Project Course: Topics in Artificial Intelligence – Learning in Multi-Agent Systems”, Ben-Gurion University.
- [Fall 2001-2002 ] “Compiler Design Principles”, Ben-Gurion University.
- [Fall 1997-2003,2007] “Planning and Automated Decision Making”, Ben-Gurion University.
- [Fall 1999 ] “Decisions and Preferences”, Ben-Gurion University.
- [Summer 1999-] “Project Course Coordinator”, Ben-Gurion University.
- [Spring 1998-2001 ] “Principles of Programming Languages”, Ben-Gurion University.
- [Spring 1997] “Intelligent Systems”, University of British Columbia.
- [Spring 1996 ] “Modeling and Simulation” University of British Columbia.
- [Fall 1994 ] “Readings for the AI Qualification Exams”, Stanford University.
- [Fall 1991 ] “Principles of Programming Languages”, Hebrew University of Jerusalem.

(b) Research students

1. Igor Razgon: “Goal ordering heuristics for classical planning”, M.Sc. Completed, 2001.
2. Guy Shani: “An MDP based Recommender System”, M.Sc. Completed 2002.
3. Carmel Domshlak: “Modeling and Reasoning about Preferences with CP-nets”, Jointly supervised with Eyal Shimony. Ph.d. Completed 2003.
4. Shirlee Magedish: “Automatic Translation of Routing Policies to the COPS Layer and Its Simulation in OPNET”, M.Sc. Completed 2003.
5. Avivit Eitan: “A ZBDD-Based Approach to Formula Simplification”, M.Sc. Completed 2004.
6. Tanya Kogan: “An Automated Travel Agent Using CP-Networks”, M.Sc. Submitted. Completed 2004.
7. Yuri Chernyavsky: “Classical Planning with Preferences”, M.Sc. Completed 2004.
8. Avraham Bab: “Reinforcement Learning in Multi-Agent Systems”, M.Sc. Completed 2005.
9. Eran Mizrachi: “Incremental Preference Elicitation for Optimal Selection,” M.Sc. Completed 2006.
10. Yael Silver, “Preferences Over Sets,” M.Sc. completed January, 2007.
11. Guy Shani, “Point-Based Methods for POMDPs,” Ph.d. Submitted, August, 2008.
12. Yoel Schejter, “Relational Preference Rule,” M.Sc., expected completion date 2009.
13. Raz Nissim, “Planning for Loosely Coupled Multi-agent Systems,” M.Sc., expected completion date 2010.
14. Avitam Geffen, TBA, M.Sc., expected completion date 2011.
15. Udi Apsel, “Lifted Inference using the Compiled Multinomial Method, M.Sc., expected completion date, 2010.

- **Awards, citations, honors, fellowships**

- (a) Honors, awards

- [1986-1989] Dean's List, Hebrew University of Jerusalem.
    - [1987] The De-Shalit Physics Workshop Award. Weizmann Institute of Science.
    - [1987] President's Award. Hebrew University of Jerusalem.
    - [1992] Passed AI Qualification Exam with Distinction. Stanford University.
    - [1996] Nominated to the ACM Best Dissertation Award by Stanford University.
    - [1996] Arthur Samuel Memorial Thesis Award. Stanford University.
    - [2004] Best Paper Award: Second International Conference on AI Planning and Scheduling, Whistler, Canada.
    - [\*][2008] Best Paper Award: Sixth International Conference on AI Planning and Scheduling, Sydney, Australia.
    - [\*][2009] JAIR-IJCAI Best Paper Award. Awarded to an outstanding paper published in JAIR in the preceding five calendar years. [C. Boutilier, R. Brafman, C. Domshlak, H. Hoos, and D. Poole, "CP-nets: A Tool for Representing and Reasoning with Conditional Ceteris Paribus Preference Statements", *Journal of AI Research*, 21: 135-191, 2004.]

- **Scientific publications**

- (c) Refereed Chapters in collective volumes

- 1. R. Brafman and Y. Shoham (1996), "Knowledge Considerations in Robotics", *Reasoning with Uncertainty in Robotics*, Springer-Verlag, L. Dorst, M. van Lambalgen, and F. Voorbraak, editors, pp. 248-262.

(d) Refereed articles in scientific journals

Journal	(CS Dept) Rank	Count
Journal of AI Research	1	10
Artificial Intelligence	1	6
Journal of the ACM	1	2
Journal of Machine Learning Research	1	3
ACM Transactions on Information Systems	1	1
Artificial Intelligence Magazine	2	1
Computational Intelligence	2	2
Journal of Logic and Computation	2	1
IEEE Transactions on Systems, Man, and Cybernetics - B	2	2

1. R. Brafman and M. Tennenholtz, “On partially controlled multi-agent systems.”, *Journal of Artificial Intelligence Research*, 4(1996) pp. 447–503.
2. R. Brafman, J-C. Latombe, Y. Moses, and Y. Shoham, “Applications of a logic of knowledge to motion planning under uncertainty”, *Journal of the ACM*, 44(5)(1997), pp. 633–668.
3. R. Brafman, “A first-order conditional logic with qualitative statistical semantics”, *Journal of Logic and Computation*, 7(6)(1997), pp. 777–803.
4. R. Brafman and M. Tennenholtz, “Modeling agents as qualitative decision makers”, *Artificial Intelligence*, 94(1997), pp. 217–268.
5. R. Brafman, J. Halpern, and Y. Shoham, “On the knowledge requirements of tasks”, *Artificial Intelligence*, 98(1-2)(1998), pp. 317–350.
6. R. Brafman and M. Tennenholtz, “An axiomatic treatment of three qualitative decision criteria”, *Journal of the ACM*, 47(3)(2000), pp. 452–482.
7. R. Brafman and M. Tennenholtz, “A Near Optimal Polynomial Time Algorithm for Learning in Certain Classes of Stochastic Games”, *Artificial Intelligence*, 121(1-2)(2000), pp. 31-47.
8. R. Brafman, “On Reachability, Relevance, and Resolution in the Planning as Satisfiability Approach”, *Journal of Artificial Intelligence Research*, 14(2001), pp. 1-28.
9. C. Boutilier and R. Brafman, “Partial Order Planing with Concurrent Interacting Actions”, *Journal of Artificial Intelligence Research*, 14(2001) pp. 105–136.
10. R. Brafman and N. Friedman, “On Decision-Theoretic Foundations for Defaults”, *Artificial Intelligence*, 133(1-2)(2001), pp.1-33.
11. R. Brafman and M. Tennenholtz, “R-max, A General Polynomial Time Algorithms for Near-Optimal Reinforcement Learning”, *Journal of Machine Learning Research*, 3(Oct):213-231, 2002.
12. R. Brafman and C. Domshlak, “Structure and Complexity in Planning with Unary Operators”, *Journal of Artificial Intelligence Research*, 18: 315-349, 2003.
13. R. Brafman and M. Tennenholtz, “Learning to Coordinate Efficiently: A Model-Based Approach”, *Journal of Artificial Intelligence Research*, 19: 11-23, 2003.
14. R. Brafman, “A Simplifier for Propositional Formulas With Many Binary Clauses”, *IEEE Transactions on Systems, Man, and Cybernetics - B*, 34(1):52-59, 2004.
15. C. Boutilier, R. Brafman, C. Domshlak, H. Hoos, and D. Poole, “CP-nets: A Tool for Representing and Reasoning with Conditional *Ceteris Paribus* Preference Statements”, *Journal of AI Research*, 21: 135-191, 2004. **Winner of the JAIR-IJCAI Best Paper Award.**
16. C. Boutilier, R. Brafman, C. Domshlak, H. Hoos, and D. Poole, “Preference-based Constrained Optimization with CP-nets”, *Computational Intelligence*, Special Issue on Preferences, 20(2): 137-157, 2004.
17. R. Brafman and Y. Dimopolous, “Extended Semantics and Optimization Algorithms for CP-Networks”, *Computational Intelligence*, Special Issue on Preferences, 20(2): 218-245, 2004.

18. R. Brafman, C. Domshlak, and E. Shimony, "Qualitative Decision Making in Adaptive Presentation of Structured Information", *ACM Transactions on Information Systems*, 22(4):503-539, 2004.
19. R. Brafman and M. Tennenholtz, "Efficient Learning Equilibrium", *Artificial Intelligence*, 159(1-2):27-47, 2004.
20. \* G. Shani, D. Heckerman, and R. I. Brafman, "An MDP-Based Recommender System" *Journal of Machine Learning Research* 6(Sep):1265-1295, 2005.
21. \* R. Brafman, C. Domshlak, and E. Shimony, "On Graphical Modeling of Preference and Importance", *Journal of AI Research* 25: 389-424, 2006.
22. \* J. Hoffman and R. Brafman, "Conformant planning via heuristic forward search: A new approach", *Artificial Intelligence*, 170(6-7):507-541, 2006.
23. \* R. Brafman and C. Domshlak, "Graphically structured value-function compilation", *Artificial Intelligence*, 172(2-3) 325-349, 2008.
24. \* G. Shani and R. Brafman and S. E. Shimony, "Prioritizing Point-Based Solvers," *IEEE Transactions on Systems, Man, and Cybernetics, Part B (SMC-B)*, 38(6):1592-1605, 2008.
25. \* A. Bab and R. Brafman, "Multi-Agent Reinforcement Learning in Common Interest and Fixed Sum Stochastic Games: An Experimental Study," *Journal of Machine Learning Research*, 9(Dec):2635-2675, 2008.
26. \* N. Meuleau and E. Benezera and R. Brafman and E. Hansen and Mausam, "A Heuristic Search Approach to Planning with Continuous Resources in Stochastic Domains," *Journal of Artificial Intelligence Research*, 34:27-59, 2009.
27. \* M. Binshtok and R. Brafman and C. Domshlak and S. Shimony, "Generic Preferences of Subsets of Structured Objects," *Journal of Artificial Intelligence Research*, 34:133-164, 2009.
28. \* R. Brafman and C. Domshlak, "Preference Handling: An Introductory Tutorial," 30(1), *AI Magazine*, 2009.

(e) Refereed articles in Peer-reviewed Conference Proceedings

Conference Proceedings	(CS Dept) Rank	Articles w/o Journal Version	Total
AAAI	1	5	11
IJCAI	1	5	15
ICAPS/AIPS	1	6	9
UAI	1	2	4
NIPS	1	1	2
KR	2	1	2
ECML	2	1	3
ECP	2	1	1

- 1993, R. Brafman, J-C. Latombe, and Y. Shoham 1981, “Towards knowledge-level analysis of motion planning”, *Proc. AAAI 11th National Conference on AI*, pp. 87–98, San Jose, USA.
- 1994, R. Brafman and M. Tenenholz, “Belief Ascription and mental-level modeling”, *Proc. 4th International Conference on Knowledge Representation and Reasoning (KR’94)*, pp. 87–98, Bonn, Germany.
- 1994, R. Brafman, J-C. Latombe, Y. Moses, and Y. Shoham, “Knowledge as a tool in motion planning under uncertainty”, *Proc. 5th Conf. on Theoretical Aspects of Reasoning about Knowledge*, pp. 208–224, Carmel, USA.
- 1995, R. Brafman and M. Tenenholz, “Towards action prediction using a mental-level model”, *Proc. 14 International Joint Conference on AI (IJCAI)*, Montreal, Canada.
- 1995, R. Brafman and Y. Shoham, “Knowledge consideration in robotics and distribution of robotic tasks”, *Proc. 14 International Joint Conference on AI (IJCAI)*, Montreal, Canada.
- 1995, R. Brafman and N. Friedman, “On decision-theoretic foundations for defaults”, *Proc. 14 International Joint Conference on AI (IJCAI)*, Montreal, Canada.
- 1996, R. Brafman and M. Tenenholz, “On the foundations of qualitative decision theory”, *Proc. AAAI 13th National Conference on AI*, pp. 1291–1296, Portland, USA.
- 1997, R. Brafman and M. Tenenholz, “On the foundations of qualitative decision theory”, *Proc. AAAI 14th National Conference on AI*, pp. 76–81, Rhode Island, USA.
- 1997, C. Boutilier and R. Brafman, “Planning with concurrent interacting actions”, *Proc. AAAI 14th National Conference on AI*, pp. 720–726, Rhode Island, USA.
- <sup>1</sup> 1997, R. Brafman, “A heuristic variable grid solution method for POMDPs”, *Proc. AAAI 14th National Conference on AI*, pp. 727–733, Rhode Island, USA. Acceptance rate: 36%.
- + 1997, C. Boutilier, R. Brafman, and C. Geib, “Prioritized goal decomposition of Markov decision processes: Towards a synthesis of classical and decision-theoretic planning”, *Proc. 15th International Joint Conference on AI (IJCAI)*, pp. 1156–1163, Nagoya, Japan. Acceptance rate: 24%.
- + 1998, C. Boutilier, R. Brafman, and C. Geib, “Structured reachability analysis for Markov decision processes”, *Proc. 14th Conference on Uncertainty in AI*, pp. 24–32, Madison, USA. Acceptance rate: 45%.
- 1999, R. Brafman, “Reachability, relevance, resolution, and the planning as satisfiability approach”, *Proc. 16th International Joint Conference on AI (IJCAI)*, pp. 976–981, Stockholm, Sweden.
- 1999, R. Brafman and M. Tenenholz, “A near-optimal poly-time algorithm for learning in stochastic games”, *Proc. 16th International Joint Conference on AI (IJCAI)*, pp. 734–739, Stockholm, Sweden.

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<sup>1</sup>+: No corresponding journal publication

15. + 1999, R. Brafman and H. Hoos, "To encode or not to encode – I. Linear planning", *Proc. 16th International Joint Conference on AI (IJCAI)*, pp. 988-993, Stockholm, Sweden. Acceptance rate:26%.
16. 1999, C. Boutilier, R. Brafman, H. Hoos, and D. Poole, "Reasoning with conditional ceteris paribus preference statements", *Proc. 15 Conf. on Uncertainty in AI*, pp. 71–80, Stockholm, Sweden.
17. 2000, C. Domshlak and R. Brafman, "Structure and Complexity in Planning with Unary Operators", *Proceedings of 14th Workshop "New Results in Planning, Scheduling and Design", ECAI-2000*, pp. 11-15, Berlin, Germany.
18. 2001, R. Brafman, "A Simplifier for Propositional Formulas with Many Binary Clauses", *Proceedings 17th International Joint Conference on AI (IJCAI)*, pp. 515–520, Seattle, WA USA.
19. 2001, R. Brafman and M. Tennenholtz, "R-max - A General Polynomial Time Algorithm for Near-Optimal Reinforcement Learning", *Proceedings 17th International Joint Conference on AI (IJCAI)*, pp. 953–958, Seattle, WA USA.
20. 2001, C. Domshlak, R. Brafman, and E. S. Shimony, "Preference-Based Configuration of Web Page Content", *Proceedings 17th International Joint Conference on AI (IJCAI)*, pp. 1451–1456, Seattle, WA USA.
21. + 2001, C. Boutilier, F. Bacchus, and R. Brafman, "UCP-networks: A Directed Graphical Representation of Conditional Utilities", *Proc. 17th Conference on Uncertainty in AI (UAI)*, pp. 56–64, Seattle, WA USA. Acceptance rate:40%.
22. + 2001, I. Razgon and R. Brafman, "A Forward Search Planning Algorithm with a Goal Ordering Heuristic," *Proc. of the 6th European Conference on Planning*, pp.25–36, Toledo, Spain. Acceptance rate:50%.
23. 2002, C. Domshlak and R. Brafman, "Structure and Complexity in Planning with Unary Operators", *Proceedings of the 6th International Symposium on AI Planning Systems (AIPS'02)*, pp. 313–322, Toulouse, France.
24. 2002, C. Domshlak and R. Brafman, "CP-nets – Reasoning and Consistency Testing", *Proceedings of 8th International Conference on Principles of Knowledge Representation and Reasoning*, pp. 121–132, Toulouse, France.
25. 2002, R. Brafman and C. Domshlak, "TCP-nets for Preference-based Product Configuration," *Proceedings of the Fifth Workshop on Configuration, ECAI-2002*, Lion, France.
26. 2002, R. Brafman and C. Domshlak, "Tradeoff-enhanced CP-Networks," *Proceedings of the 18th Conference of Uncertainty in AI (UAI'02)*, pp. 69–76, Edmonton, Canada.
27. 2002, G. Shani and R. Brafman and D. Heckerman, "An MDP-Based Recommender System," *Proceedings of the 18th Conference of Uncertainty in AI (UAI'02)*, pp. 453–460, Edmonton, Canada.
28. 2002, R. Brafman and M. Tennenholtz, "Efficient Learning Equilibrium," *Proceedings of the Conference on Neural Information Processing (NIPS'02)*, Vancouver, Canada.
29. 2003, R. Brafman and G. Shani and D. Heckerman, "Recommendation as a Stochastic Sequential Decision Problem," *Proceedings of the First International Conference on AI Planning and Scheduling (ICAPS)*, pp. 164–173, Trento, Italy.
30. 2003, R. Brafman and Y. Dimopoulos, "A New Look at the Semantics and Optimization Methods of CP-Networks," *Proceedings of the 18th International Joint Conference on AI (IJCAI'03)*, Acapulco, Mexico.
31. 2004, R. Brafman and J. Hoffman, "Conformant Planning via Heuristic Forward Search: A New Approach," *Proceedings of the Second International Conference of AI Planning and Scheduling (ICAPS)*, Whistler, Canada. **Recipient of Distinguished Paper Award.**
32. 2004, R. Brafman and C. Domshlak and T. Kogan, "Compact Value-Function Representations for Qualitative Preferences," *Proceedings of the 20th on Uncertainty in Artificial Intelligence (UAI'04)*, Banff, Canada.

33. \* 2004, Avi Bab and R. Brafman, "An Experimental Study of Different Approaches to Reinforcement Learning Algorithms in Common Interest Stochastic Games," *15th European Conference on Machine Learning (ECML'04)*, Pisa, Italy.
34. \*+ 2004, G. Shani and R. Brafman, "Resolving Perceptual Aliasing in the Presence of Noisy Sensors," *18th Annual Conference on Neural Information Processing Systems (NIPS'04)*, Whistler, Canada. Acceptance rate: 25%.
35. \*+ 2005, R. Brafman and Y. Chernyavsky, "Planning with Goal Preferences and Constraints," *Third International Conference on Automated Planning and Scheduling (ICAPS'05)*, Monterey, California USA. Acceptance rate: 35%.
36. \*+ 2005, J. Hoffmann and R. Brafman, "Contingent Planning via Heuristic Forward Search with Implicit Belief States," *Third International Conference on Automated Planning and Scheduling (ICAPS'05)*, Monterey, California USA. Acceptance rate: 25%.
37. \* 2005, M. Mausam and E. Benazera and R. Brafman and N. Meuleau and E. Hansen, "Planning with Continuous Resources in Stochastic Domains," *19th International Joint Conference on AI (IJCAI'05)*, Edinburgh, Scotland.
38. \*+ 2005, R. Brafman and M. Tennenholtz, "Optimal Efficient Learning Equilibrium: Imperfect Monitoring in Symmetric Games," (*AAAI'05*). Acceptance rate: 18.4%.
39. \*+ 2005, G. Shani and R. I. Brafman and S. E. Shimony, "Model-Based Online Learning of POMDPs," *European Conference on Machine Learning (ECML'05)*, Porto, Portugal. Acceptance rate: 19.7%.
40. \* 2006 G. Shani and R. I. Brafman and S. E. Shimony, "Prioritizing Point-Based POMDP Solvers," *European Conference on Machine Learning (ECML'06)*.
41. \*+ 2006 N. Meuleau and R. Brafman and E. Benezera, "Stochastic Over-subscription Planning using Hierarchies of MDPs," *Fourth International Conference on Automated Planning and Scheduling (ICAPS'06)*, Lake District, England. Acceptance rate: 33%.
42. \*+ 2006 J. Frank and J. Crawford and L. Khatib and R. Brafman, "Tractable Optimal Competitive Scheduling," *Fourth International Conference on Automated Planning and Scheduling (ICAPS'06)*, Lake District, England. Acceptance rate: 33%.
43. \* 2006 R. Brafman and C. Domshlak and E. S. Shimony and Y. Silver, "Preferences of Sets," *Proc. of the 21st National Conference on AI (AAAI'06)*, Boston, USA. Acceptance rate: 21%.
44. \*+ 2006 R. Brafman and C. Domshlak, "Factored Planning: How, When and When Not," *Proc. of the 21st National Conference on AI (AAAI'06)*, Boston, USA. Acceptance rate: 21%.
45. \*+ 2007 G. Shani and R. Brafman and E. S. Shimony, "Forward Search Value Iteration for POMDPs" *Proc. of the 20th International Joint Conference on AI (IJCAI'07)*, Hyderabad, India. Acceptance rate: 15.7%.
46. \*+ 2007 N. Meuleau and R. Brafman, "Hierarchical Heuristic Forward Search in Stochastic Domains" *Proc. of the 20th International Joint Conference on AI (IJCAI'07)*, Hyderabad, India. Acceptance rate: 15.7%.
47. \* 2007 M. Binshtok and R. I. Brafman and S. E. Shimony and A. Mani and C. Boutilier, "Computing Optimal Subsets," *Proc. of the 22st National Conference on AI (AAAI'07)*, Vancouver, Canada. Acceptance rate: 27%.
48. \*+ 2007 Y. Virin and G. Shani and S. E. Shimony and R. I. Brafman, "Scaling Up: Solving POMDPs through Value-Based Clustering" *Proc. of the 22st National Conference on AI (AAAI'07)*, Vancouver, Canada. Acceptance rate: 27%.
49. \*+ 2007 S. Jeong and N. Lambert and Y. Shoham and R. I. SBrafman, "Near-Optimal Search in Continuous Domains," *Proc. of the 22st National Conference on AI (AAAI'07)*, Vancouver, Canada. Acceptance rate: 27%.
50. \*+ 2008 R. Brafman, "Relational Preference Rules for Control," *Proc. of the 11th Int. Conf. on Knowledge Representation and Reasoning (KR'08)*, Sydney, Australia Acceptance rate: 27%.

51. \*+ 2008 R. Brafman and C. Domshlak, "From One to Many: Planning for Loosely Coupled Multi-Agent Systems," *Proc. of the 18th Int. Conf. on Planning and Scheduling Systems (ICAPS'08)*, Sydney Australia, 2008. **Winner of the conference's "Distinguished Paper Award."** Acceptance rate: 30%.
52. \*+ 2008 G. Shany and P. Poupart and R. Brafman and S. E. Shimony, "Efficient ADD Operations for Point-Based Methods," *Proc. of the 18th Int. Conf. on Planning and Scheduling Systems (ICAPS'08)*, Sydney Australia, 2008. Acceptance rate: 30%.
53. \*+ 2009 R. Brafman and C. Domshlak and Y. Engel and M. Tennenholtz, "Planning Games," *IJCAI'09*, Los-Angeles, CA, USA. Acceptance rate: 26%.

- **Lectures and presentations at meetings and invited seminars**

- (a) Invited plenary lectures at conferences or meetings

September 2003, "Reasoning and Constrained Optimization with CP-Networks" (Tutorial), Ninth International Conference on Principles and Practice of Constraints Programming, Kinsale, Ireland.

October 2003, "Preference Elicitation – An Overview", AFRL/IISI Workshop on Mixed Initiative Decision Making, Cornell University, USA.

January 2004, "Preference-Based Constrained Optimization using CP-Nets", Eighth International Symposium on AI and Mathematics, Fort Lauderdale, Florida.

July 2004, "Tutorial on CP-Nets," Invited tutorial, Twentieth Annual Conference on Uncertainty in AI, Banf, Canada.

\* September 2008, "Planning, Preference, and Control," Joint ICAPS-KR invited talk, International Conference on Planning and Scheduling Systems and the International Conference on Knowledge Representation and Reasoning, Sydney, Australia.

\* October 2008, "Preference Handling," Invited talk at LFA'08: French Conference on Fuzzy Logic and Its Applications, Lens, France.

\* July 2009, "Planning and Preferences," Invited talk at Workshop on Graph Structures for Knowledge Representation and Reasoning, IJCAI'09, 2009.

- (b) Presentations of papers at conferences or meetings

1. Please see list of papers in conference proceedings, above.
2. 1995, R. Brafman and M. Tennenholtz, "Towards action prediction using a mental-level model", *Proc. AAAI Spring Symposium on Representing Mental States and Mechanisms*, Stanford University, USA.
3. 1997, R. Brafman and M. Tennenholtz, "On the axiomatization of qualitative decision criteria", *Proc. AAAI Spring Symposium on Qualitative Preferences in Deliberation and Practical Reasoning*, Stanford University, USA.
4. 1997, C. Boutilier, R. Brafman, C. Geib, and D. Poole, "Reasoning with ceteris paribus preference statements", *Proc. AAAI Spring Symposium on Qualitative Preferences in Deliberation and Practical Reasoning*, Stanford University, USA.
5. 1998, R. Brafman, H. Hoos, and C. Boutilier, "LPSP - A linear plan-level stochastic planner", *Proc. 17th Workshop of the UK Planning and Scheduling SIG*, pp. 3–16, UK.
6. + 1998, C. Boutilier, R. Brafman, and C. Geib, "Structured reachability analysis for Markov decision processes", *Proc. 14th Conference on Uncertainty in AI*, pp. 24–32, Madison, USA. Acceptance rate: 45%.
7. 2000, C. Domshlak and R. Brafman, "Structure and Complexity in Planning with Unary Operators", *Proceedings of 14th Workshop "New Results in Planning, Scheduling and Design", ECAI-2000*, pp. 11-15, Berlin, Germany.

8. 2000, C. Domshlak, S. Genaim, and R. Brafman, "Preference-based Configuration of Web Page Content, *Proceedings of 3rd Workshop on Configuration, ECAI-2000*, pp. 19–22, Berlin, Germany.
9. 2001, R. Brafman and C. Domshlak, "CP-networks for Preference-based CSP," *Proceedings of the CP'01 Workshop on Modeling and Solving Problems with Soft Constraints*, pp.31–42.
10. 2002, R. Brafman and C. Domshlak, "Introducing Variable Importance Tradeoffs into CP-Nets," *AIPS'02 Workshop on Planning and Scheduling with Multiple Criteria*.
11. 2003, R. Brafman and G. Shani and D. Heckerman, "Recommendation as a Stochastic Sequential Decision Problem," *Proceedings of the First International Conference on AI Planning and Scheduling (ICAPS)*, pp. 164–173, Trento, Italy.
12. 2003, R. Brafman and J. Hoffman, "Conformant Planning via Heuristic Forward Search," *Proceedings of the ICAPS Workshop on Planning under Uncertainty and Incomplete Information*, pp. 8–17, Trento, Italy.
13. \* 2005, R. Brafman and D. Friedman, "Adaptive Rich-Media Presentation via Preference-based Constrained Optimization," *IJCAI Workshop on Advances in Preferences Handling (IJCAI'05)*, Edinburgh, Scotland.
14. \* 2005, R. Brafman and C. Domshlak and S.E. Shimony and Y. Silver, "TCP-nets for Preferences Over Sets," *IJCAI Workshop on Advances in Preferences Handling (IJCAI'05)*, Edinburgh, Scotland.
15. \* 2005, K. Golden and R. Brafman and Wanlin Pang, "Preferences in Data Production Planning," *IJCAI Workshop on Advances in Preferences Handling (IJCAI'05)*, Edinburgh, Scotland.

(d) Seminars at universities and institutions

- 1994 – "Applications of knowledge in motion planning under uncertainty",
- \* Weizmann Institute of Science, CS Colloquium.
  - \* Tel-Aviv University, CS Seminar.
  - \* Technion, CS Colloquium.
  - \* Hebrew University of Jerusalem, CS Colloquium.
  - \* Ben-Gurion University, CS Colloquium.
  - \* University of Toronto, CS Colloquium.
  - \* University of California at Irvine, CS Colloquium.
- 1996 – "On the foundations of qualitative decision theory",
- \* Weizmann Institute of Science, CS Colloquium.
  - \* Tel-Aviv University, CS Seminar.
  - \* Technion, CS Colloquium.
  - \* Hebrew University of Jerusalem, CS Colloquium.
- 1999 – "To Encode or Not to Encode?", Ben-Gurion University, CS Colloquium.
- 2000 – "Some Issues Related to the Planning As Satisfiability Approach",
- \* Cornell University, AI Seminar.
  - \* University of Toronto, AI Seminar.
  - \* Stanford University, AI Seminar.
  - \* University of Washington, AI Seminar.
- 2001 – "R-max: A Near-optimal Polytime Algorithm for Reinforcement Learning
- \* Ben-Gurion University, CS Seminar.
  - \* Technion, Joint Information Technology and Game Theory Seminar.
  - \* Hebrew University, Center for Rationality Seminar.
  - \* Tel-Aviv University, CS Seminar.

- 2003 – “Efficient Learning in Stochastic Games”
  - \* Cornell University, CS Colloquium.
  - \* University of Massachusetts, Amherst, AI Seminar.
  - \* University of New Jersey, Rutgers, CS Colloquium.
- 2004 – “Efficient Learning in Stochastic Games”
  - \* University of Toronto, AI Seminar.
  - \* Stanford University, AI Seminar.
- 2005 – “Planning with Preferences”
  - \* NASA Ames Research Center – AI Seminar.
- 2006+ – “Working with Preferences”
  - \* NASA Ames Research Center – AI Seminar.
  - \* SRI International – AI Seminar.
  - \* Palo Alto Research Center – AI Seminar.
  - \* IBM Haifa Research Lab – Research Seminar.
- 2006 – “Factored Planning: How, When and When Not”
  - \* NASA Ames Research Center – AI Seminar.
  - \* Arizon State University – Planning Seminar.
  - \* University of Washington – AI Seminar.
- 2008 – “Efficient Planning for Loosely Coupled Multi-Agent Systems”
  - \* Joint Multi-Agent Research Seminar – Paris
- 2008 – “Preference Reasoning for Content Selection”
  - \* Dauphine University, Paris – LAMSADE Research Seminar
- 2008 – “Preference for Control”
  - \* University of Catania, Italy – COST meeting
- 2008 – “Short Course on Preference Handling”
  - \* Dauphine University, Paris – LAMSADE

- **Research grants**

- [2007 – 2011] Israel Science Foundation: ”Factored Planning”, \$50,000 per year.
- [2007 – 2010] COST Action IC0602 ”Algorithmic Decision Theory”. Member of Management Committee representing Israel and Working Group Head. Budget: 100,000 Euro/year.
- [2006 – ] IMG4 consortium (MAGNET), 4th generation imaging machines. Collaboration with KLA-tencor, Applied Materials, Orbotech, Nova, and other industrial partners, Technion. BGU-knowledge base and meta-reasoning group (R. Brafman, E. Gudes, M. Sipper, E. Shimony) received: (05/06): 450K NIS, (06/07): 900K NIS.
- [2006 – 2008] Deutsche Telecom - Prosero project, total contract \$2M for 2006-2008. First 6 months \$490K. Co-PIs: M. Elhadad, E. Shimony, A. Sturm, M. Codish, M. Balaban, R. Brafman.
- [2005 – 2008] NSF - PIs: Yoav Shoham and Scott Klemer (Stanford University). “Preference-Based Tools for Information Presentation” NSF Grant # 0534662. \$600,000 for three years.
- [2005 – 2008] NSF - PIs: Yoav Shoham and Robert Wilson. “Group Decision Making” NSF Grant # SES-0527650 \$690,000 for three years.
- [2000 – 2005] Magnet – STRIMM consortium, (2000-2002 with Y. Ben-Shimol, Dept. of Communication Engineering, BGU). “Quality of Service Support for Streaming,” \$100,000–150,000 per year with Ben-Shimol. \$40,000 currently.

[2002 –2005] Israel Science Foundation – “Efficient and Effective Learning in Multi-Agent Systems,” three years, \$45,000 per year.

- **Present activities**

- (a) Research in progress

1. Rich, Heterogeneous Preference Representation and Reasoning Techniques.
2. Factored Planning with C. Domshlak.
3. Adaptive Presentation Systems with S. Klemmer.
4. POMDP solutions with G. Shani and E. S. Shimony.

- **Additional information**

- (a) Organizer of

- Workshop on “Preferences: Specification, Inference, Applications”, Schloss Dagstuhl – International Conference and Research Center for Computer Science, Germany, 2004.
- IJCAI’05 Workshop on “Advances in Preference Handling”, Edinburgh, Scotland, 2005.
- IJCAI’05 Tutorial on “Preference Handling”, Edinburgh, Scotland, 2005.
- AAAI’07 Tutorial on “Preference Handling”, Vancouver, Canada, 2007.
- International Conference on Automated Planning and Scheduling (ICAPS) Program Chair, 2010.

- (b) On Program Committee of

- Knowledge Representation and Reasoning, Italy, 1997.
- The Second Holon Workshop on Mechanotronics, 1998.
- National Conference on AI of the American Association for AI, 1998.
- National Conference on AI of the American Association for AI, 1999.
- Conference on Uncertainty in AI, 1999.
- Conference on Uncertainty in AI, 2000.
- ECAI Workshop on Local Search for Planning and Scheduling, 2000.
- Conference on Uncertainty in AI, 2001.
- National Conference on AI of the American Association for AI, 2002.
- German National Conference on AI, 2002.
- AAAI’02 Workshop on Qualitative Preferences, 2002.
- Conference on Uncertainty in AI, 2002.
- Autonomous Agents and Multi-Agent Systems, 2003.
- International Conference on Planning and Scheduling Systems, 2003.
- Conference on Uncertainty in AI, 2003.
- IJCAI’03 Workshop on Configuration, 2003.
- Knowledge Representation and Reasoning, Vancouver, 2004.
- International Conference on Planning and Scheduling Systems, 2004.
- National Conference on AI of the American Association for AI, 2004.
- Conference on Uncertainty in AI, 2004 – Senior Program Committee.
- Israel Science Foundation, 2004.
- International Joint Conference on AI, 2005.

- National Conference on AI of the American Association for AI, 2005 – Senior Program Committee.
- Conference on Uncertainty in AI, 2005 – Senior Program Committee.
- SAT 2005.
- Knowledge Representation and Reasoning, England, 2005.
- 9th International Symposium on AI and Mathematics, Florida, 2006.
- Conference on Uncertainty in AI, 2006 – Program Committee.
- European Conference on AI, Italy, 2006 – Area Chair.
- International Conference on Planning and Scheduling Systems, 2007
- AAAI'07 Workshop on Preference Handling
- International Symposium on AI and Mathematics, 2008.
- National Conference on AI of the American Association for AI, 2008.
- European Conference on AI, 2008.
- International Conference on Planning and Scheduling Systems, 2008 – Workshop Chair
- International Joint Conference on AI, 2009 – Tutorial Chair
- Algorithmic Decision Theory (ADT), 2009.
- International Conference on Planning and Scheduling Systems, 2009.

(c) Reviewer For

- Artificial Intelligence Journal
- Journal of Artificial Intelligence Research
- Journal of Machine Learning Research
- Acta Informatica
- Computational Intelligence
- Systems, Man, and Cybernetics, Part B.
- Decision Support Systems Journal
- Annals of Operations Research
- Israel-US Bi-National Science Foundation (BSF)
- Israel Science Foundations (Academia)
- German Israel Foundation for Scientific Research (GIF)
- Australian Science Foundation
- Machine Learning Journal
- International Joint Conference on AI, 1995, 1997, 1999, 2001, 2003.
- European Conference on Planning, 2001.
- Neural Information Processing Symposium, 2003.
- GIF, ISF, Irish Research Council.
- IEEE Transactions on Service Computing