

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

Ronen I. Brafman  
Date and place of birth: 23/12/64 Israel  
Address at work: Department of Computer Science  
Ben Gurion University of the Negev  
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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 – April 2010] Associate Professor. Ben-Gurion University, Department of Computer Science, Beer-Sheva, Israel.

[April 2010 – Present] 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.

- [2008–2010] Chair, Computer Science Department.

- [2011–2014] Chair, Graduate Teaching Committee, Computer Science Department.

- (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.

- [May 2010 – May 2012] Advisory Board, DelegateCom, Israel. Area: Personal process automation.

- [July 2014 – April 2016] Consultant, Israel Air Industries - Satellite Division. Area: Scheduling.

- (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 2011] Editorial Board Member *Artificial Intelligence Journal*.

[July 2010 – Present] Associate Editor *Autonomous Agents and Multi-Agent Systems*.

[December 2011 – 2016] Associate Editor *Artificial Intelligence Journal*.

[December 2011 – Present] Advisory Board Member *Artificial Intelligence Journal*.

- **Educational activities**

- (a) Courses taught

- [Fall 1991 ] “Principles of Programming Languages,” (Hebrew University of Jerusalem).

- [Spring 1996 ] “Modeling and Simulation,” (University of British Columbia).

- [Spring 1997] “Intelligent Systems,” (University of British Columbia).

- [Fall 2001-2002 ] “Compiler Design Principles.”

- [Summer 2002, Spring 2004] “Mini-Project Course: Topics in Constraint Satisfaction – SAT Simplification Methods.”

- [Spring 2002] “Mini-Project Course: Topics in Artificial Intelligence – Learning in Multi-Agent Systems.”

- [Fall 1997-2003,2007,2011-2014] “Planning and Automated Decision Making.”

- [Spring 1998-2001 ] “Principles of Programming Languages.”

- [Fall 1999 ] “Decisions and Preferences.”

- [Summer 1999-2004] “Project Course.”

- [Spring 2003, Spring 2011] “Topics in the Frontier of Computer Science for Excellent Students.”

- [Spring 2004] “Preferences and Optimal Choice.”

- [Spring 2004] “Graduate Research Seminar in AI.”

- [Fall 2006-2014] “Automata and Formal Languages.”

- [Fall 2006] “Topics in Artificial Intelligence.”

- [Spring 2007] “Advanced Research Seminar in AI.”

- [Spring 2008] “Introduction to Machine Learning.”

- [Fall 2012] “Mini-Project Course: Topics in Reactive Systems Programming.”

- [Fall 2014,2015] “Mini-Project Course: Autonomous Robot Programming with ROS.”

- [Fall 2014,2015] “Graduate Robotics Lab.”

- (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. 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 2007.
11. Guy Shani, "Point-Based Methods for POMDPs," Ph.d. Completed 2008.
12. Yoel Schejter, "Relational Preference Rule," M.Sc., Completed 2010.
13. Udi Apsel, "Maximization Queries in Probabilistic Relational Models," M.Sc. Completed, 2011.
14. Or Caspi, "Inspection Processes," M.Sc., Completed 2012.
15. Amihai Savir, "Example-Based Configuration," M.Sc., 2013.
16. Alexander Gorohovski, "A Pomdp Replanner," M.Sc., 2014.
17. Raz Nissim, "Planning for Loosely Coupled Multi-agent Systems," Ph.d. Completed 2015. (Combined M.Sc./Ph.d. track).
18. Avitam Geffen, "Hyper-Graphs Algorithms for Planning," Ph.d. Completed 2015.
19. Udi Apsel, "Detecting and Exploiting Symmetry in Probabilistic Relational Models," Ph.d., Completed, 2016.
20. Ran Taig, "Reduction-Based Methods for Conformant Probabilistic Planning," Ph.d., Completed 2016. (Combined M.Sc/Ph.d. track).
21. Maor Ashkenzi, "Planning and Monitoring with Performance Level Profiles," M.Sc. Expected completion date: 10/2016.
22. Lior Lotan, TBA. M.Sc. Expected completion date: 2/2017.

- **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. I. 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**

- (b) Books

1. R. I. Brafman, Hector Geffner, Joerg Hoffmann, Henry A. Kautz: "Proceedings of the 29th International Conference on Automated Planning and Scheduling," ICAPS 2010, Toronto, Ontario, Canada, May 12-16, 2010 AAAI 2010.

2. R. I. Brafman, Alexis Tsoukias, Fred Roberts: "Proceedings of the 2nd International Conference on Algorithmic Decision Theory," ADT'11, Rutgers, New-Jersey, USA, October 26-28, 2011.
3. R. I. Brafman, Carmel Domshlak, Patrik Haslum, Shlomo Zilberstein: Proceedings of the Twenty-Fifth International Conference on Automated Planning and Scheduling, ICAPS 2015, Jerusalem, Israel, June 7-11, 2015. AAAI Press 2015, ISBN 978-1-57735-731-5.

(c) Refereed Chapters in collective volumes

1. R. I. 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

1. R. I. Brafman and M. Tennenholtz, "On partially controlled multi-agent systems.", *Journal of Artificial Intelligence Research*, 4(1996) pp. 447–503.
2. R. I. 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. I. Brafman, "A first-order conditional logic with qualitative statistical semantics", *Journal of Logic and Computation*, 7(6)(1997), pp. 777–803.
4. R. I. Brafman and M. Tennenholtz, "Modeling agents as qualitative decision makers", *Artificial Intelligence*, 94(1997), pp. 217–268.
5. R. I. Brafman, J. Halpern, and Y. Shoham, "On the knowledge requirements of tasks", *Artificial Intelligence*, 98(1-2)(1998), pp. 317–350.
6. R. I. Brafman and M. Tennenholtz, "An axiomatic treatment of three qualitative decision criteria", *Journal of the ACM*, 47(3)(2000), pp. 452–482.
7. R. I. 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. I. 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. I. Brafman, "Partial Order Planning with Concurrent Interacting Actions", *Journal of Artificial Intelligence Research*, 14(2001) pp. 105–136.
10. R. I. Brafman and N. Friedman, "On Decision-Theoretic Foundations for Defaults", *Artificial Intelligence*, 133(1-2)(2001), pp.1-33.
11. R. I. 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. I. Brafman and C. Domshlak, "Structure and Complexity in Planning with Unary Operators", *Journal of Artificial Intelligence Research*, 18: 315-349, 2003.
13. R. I. Brafman and M. Tennenholtz, "Learning to Coordinate Efficiently: A Model-Based Approach", *Journal of Artificial Intelligence Research*, 19: 11-23, 2003.
14. R. I. 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. I. 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. I. 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. I. 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. I. 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. I. 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. I. 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. I. Brafman, "Conformant planning via heuristic forward search: A new approach", *Artificial Intelligence*, 170(6-7):507-541, 2006.

23. R. I. Brafman and C. Domshlak, "Graphically structured value-function compilation", *Artificial Intelligence*, 172(2-3) 325–349, 2008.
24. G. Shani and R. I. 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. I. 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. I. 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. I. 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. I. Brafman and C. Domshlak, "Preference Handling: An Introductory Tutorial," 30(1), *AI Magazine*, 2009.
29. R. I. Brafman, "Relational preference rules for control," *Artificial Intelligence*, 175(7-8): 1180-1193, 2011.
30. R. I. Brafman and G. Shani, "Replanning in Domains with Partial Information and Sensing Actions," *Journal of AI Research*, 45: 565-600, 2012.
31. R. I. Brafman and C. Domshlak, "On the complexity of planning for agent teams and its implications for single agent planning," *Artificial Intelligence*, 198: 52-71, 2013.
32. Daniel Berend, Ronen I. Brafman, S. Cohen, Solomon Eyal Shimony and Shira Zucker, "Optimal ordering of independent tests with precedence constraints," *Discrete Applied Mathematics*, 162: 115-12, 2014.
33. R. Nissim and R. I. Brafman, "Distributed Heuristic Forward Search for Multi-agent Planning," *Journal of AI Research*, 51: 293-332, 2014.

(e) Refereed articles in Peer-reviewed Conference Proceedings

1. 1993, R. I. 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.
2. 1994, R. I. Brafman and M. Tennenholtz, "Belief Ascription and mental-level modeling", *Proc. 4th International Conference on Knowledge Representation and Reasoning (KR'94)*, pp. 87–98, Bonn, Germany.
3. 1994, R. I. 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.
4. 1995, R. I. Brafman and M. Tennenholtz, "Towards action prediction using a mental-level model", *Proc. 14 International Joint Conference on AI (IJCAI)*, Montreal, Canada.
5. 1995, R. I. Brafman and Y. Shoham, "Knowledge consideration in robotics and distribution of robotic tasks", *Proc. 14 International Joint Conference on AI (IJCAI)*, Montreal, Canada.
6. 1995, R. I. Brafman and N. Friedman, "On decision-theoretic foundations for defaults", *Proc. 14 International Joint Conference on AI (IJCAI)*, Montreal, Canada.
7. 1996, R. I. Brafman and M. Tennenholtz, "On the foundations of qualitative decision theory", *Proc. AAAI 13th National Conference on AI*, pp. 1291–1296, Portland, USA.
8. 1997, R. I. Brafman and M. Tennenholtz, "On the foundations of qualitative decision theory", *Proc. AAAI 14th National Conference on AI*, pp. 76–81, Rhode Island, USA.
9. 1997, C. Boutilier and R. I. Brafman, "Planning with concurrent interacting actions", *Proc. AAAI 14th National Conference on AI*, pp. 720–726, Rhode Island, USA.

10. 1997, R. I. 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%.
11. 1997, C. Boutilier, R. I. 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%.
12. 1998, C. Boutilier, R. I. 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%.
13. 1999, R. I. Brafman, “Reachability, relevance, resolution, and the planning as satisfiability approach”, *Proc. 16th International Joint Conference on AI (IJCAI)*, pp. 976–981, Stockholm, Sweden.
14. 1999, R. I. Brafman and M. Tennenholtz, “A near-optimal poly-time algorithm for learning in stochastic games”, *Proc. 16th International Joint Conference on AI (IJCAI)*, pp. 734–739, Stockholm, Sweden.
15. 1999, R. I. 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. I. 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. 2001, R. I. Brafman, “A Simplifier for Propositional Formulas with Many Binary Clauses”, *Proceedings 17th International Joint Conference on AI (IJCAI)*, pp. 515–520, Seattle, WA USA.
18. 2001, R. I. 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.
19. 2001, C. Domshlak, R. I. 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.
20. 2001, C. Boutilier, F. Bacchus, and R. I. 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%.
21. 2001, I. Razgon and R. I. 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%.
22. 2002, C. Domshlak and R. I. 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.
23. 2002, C. Domshlak and R. I. Brafman, “CP-nets – Reasoning and Consistency Testing”, *Proceedings of 8th International Conference on Principles of Knowledge Representation and Reasoning*, pp. 121–132, Toulouse, France.
24. 2002, R. I. Brafman and C. Domshlak, “Tradeoff-enhanced CP-Networks,” *Proceedings of the 18th Conference of Uncertainty in AI (UAI’02)*, pp. 69–76, Edmonton, Canada.
25. 2002, G. Shani and R. I. 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.
26. 2002, R. I. Brafman and M. Tennenholtz, “Efficient Learning Equilibrium,” *Proceedings of the Conference on Neural Information Processing (NIPS’02)*, Vancouver, Canada.
27. 2003, R. I. 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.



28. 2003, R. I. 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.
29. 2004, R. I. 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.**
30. 2004, R. I. 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.
31. 2004, Avi Bab and R. I. 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.
32. 2004, G. Shani and R. I. 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%.
33. 2005, R. I. 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%.
34. 2005, J. Hoffmann and R. I. 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%.
35. 2005, M. Mausam and E. Benazera and R. I. Brafman and N. Meuleau and E. Hansen, "Planning with Continuous Resources in Stochastic Domains," *19th International Joint Conference on AI (IJCAI'05)*, Edinburgh, Scotland.
36. 2005, R. I. Brafman and M. Tennenholtz, "Optimal Efficient Learning Equilibrium: Imperfect Monitoring in Symmetric Games," *(AAAI'05)*. Acceptance rate: 18.4%.
37. 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%.
38. 2006 G. Shani and R. I. Brafman and S. E. Shimony, "Prioritizing Point-Based POMDP Solvers," *European Conference on Machine Learning (ECML'06)*.
39. 2006 N. Meuleau and R. I. 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%.
40. 2006 J. Frank and J. Crawford and L. Khatib and R. I. Brafman, "Tractable Optimal Competitive Scheduling," *Fourth International Conference on Automated Planning and Scheduling (ICAPS'06)*, Lake District, England. Acceptance rate: 33%.
41. 2006 R. I. 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%.
42. 2006 R. I. 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%.
43. 2007 G. Shani and R. I. 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%.
44. 2007 N. Meuleau and R. I. 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%.
45. 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%.

46. 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%.
47. 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%.
48. 2008 R. I. Brafman, "Relational Preference Rules for Control," *Proc. of the 11th Int. Conf. on Knowledge Representation and Reasoning (KR'08), Sydney, Australia* Acceptance rate: 27%.
49. 2008 R. I. 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%.
50. 2008 G. Shany and P. Poupart and R. I. 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%.
51. 2009 R. I. Brafman and C. Domshlak and Y. Engel and M. Tennenholtz, "Planning Games," *IJCAI'09, Los-Angeles, CA, USA*. Acceptance rate: 26%.
52. 2009 R. I. Brafman and Yagil Engel, "Directional Decomposition of Multiattribute Utility Functions" *ADT 2009*: 192-202.
53. 2010 R. I. Brafman and Yagil Engel, "Decomposed Utility Functions and Graphical Models for Reasoning about Preferences," *AAAI 2010*.
54. 2010 R. I. Brafman, Carmel Domshlak, Yagil Engel, and Moshe Tennenholtz, "Transferable Utility Planning Games," *AAAI 2010*.
55. 2010 Raz Nissim, R. I. Brafman, and Carmel Domshlak: "A general, fully distributed multi-agent planning algorithm," *AAMAS 2010*: 1323-1330. .
56. 2010 Brian Lee, Savil Srivastava, Ranjitha Kumar, R. I. Brafman, and Scott R. Klemmer: "Designing with interactive example galleries," *CHI 2010*: 2257-2266.
57. 2010 R. I. Brafman, Francesca Rossi, Domenico Salvagnin, Kristen Brent Venable, and Toby Walsh, "Finding the Next Solution in Constraint- and Preference-Based Knowledge Representation Formalisms," *KR 2010*.
58. 2011 Avitan Gefen and R. I. Brafman, "The Minimal Seed Set Problem," *ICAPS 2011*.
59. 2011 Guy Shani and R. I. Brafman, "Replanning in Domains with Partial Information and Sensing Actions" *IJCAI 2011*: 2021-2026.
60. R. I. Brafman, Carmel Domshlak, Yagil Engel, and Zohar Feldman, "Planning for Operational Control Systems with Predictable Exogenous Events," *AAAI 2011*.
61. R. I. Brafman, Enrico Pilotto, Francesca Rossi, Domenico Salvagnin, Kristen Brent Venable, and Toby Walsh, "The Next Best Solution," *AAAI 2011*.
62. 2011 Udi Apsel and R. I. Brafman, "Extended Lifted Inference with Joint Formula ," *UAI 2011*.
63. 2011 R. I. Brafman and Ran Taig, "A Translation Based Approach to Probabilistic Conformant Planning," *ADT 2011*.
64. 2012 Raz Nissim and R. I. Brafman, "Multi-Agent  $A^*$  for Parallel and Distributed Systems ", *AAMAS 2012*.
65. 2012 Raz Nissim, Udi Apsel and R. I. Brafman, "Tunneling and Decomposition-Based State Reduction for Optimal Planning", *ECAI 2012*.
66. 2012 Avitan Geffen and R. I. Brafman, "Pruning Methods for Optimal Delete-Free Planning", *ICAPS 2012*.
67. 2012 Udi Apsel and R. I. Brafman, "Lifted MEU by Weighted Model Counting", *AAAI 2012*.

68. 2012 Guy Shani and R. I. Brafman, "A Multi-Path Compilation Approach to Contingent Planning", AAAI 2012.
69. 2012 Udi Apsel and R. I. Brafman, "Exploiting Uniform Assignments in First-Order MPE", UAI 2012.
70. 2013 Amihai Savir, R. I. Brafman, Guy Shani: Recommending improved configurations for complex objects with an application in travel planning. RecSys 2013: 391-394.
71. 2013 R. I. Brafman, Guy Shani, and Shlomo Zilberstein, "Qualitative Planning under Partial Observability in Multi-Agent Domains," AAAI 2013.
72. 2013 Raz Nissim, R. I. Brafman, "Cost-Optimal Planning by Self-Interested Agents," AAAI 2013.
73. 2013 Ran Taig and R. I. Brafman, "Compiling Conformant Probabilistic Planning Problems into Classical Planning," ICAPS 2013.
74. 2014 Ran Taig and R. I. Brafman, "A Compilation Based Approach to Conformant Probabilistic Planning with Stochastic Actions," ICAPS 2014.
75. Shlomi Maliah, Ronen I. Brafman, Erez Karpas, Guy Shani, Partially Observable Online Contingent Planning Using Landmark Heuristics. ICAPS 2014.
76. R. I. Brafman and Guy Shani, On The Properties of Belief Tracking for Online Contingent Planning using Regression. ECAI 2014: 147-152.
77. 2015 Ran Taig and R. I. Brafman, A Compilation Based Approach to Conformant Probabilistic Planning with Stochastic Actions. ICAPS 2015: 220-224.
78. 2015 R. I. Brafman, A Privacy Preserving Algorithm for Multi-Agent Planning and Search. IJCAI 2015.
79. 2016 S. Maliah, G. Shani, and R. I. Brafman, Online Macro Generation for Privacy Preserving Planning. ICAPS 2016.
80. 2016 R. I. Brafman, M. Bar-Sinai, and M. Ashkenazi, Performance Level Profiles: A Formal Language for Describing the Expected Performance of Functional Modules. IROS 2016.

- **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.

July 2012, "What's Hot in Planning: Standing on the Shoulders of Classical Planners," Invited talk, AAAI'12.

June, 2014, “Planning Under Uncertainty: Reductions, Replanning, Simplifications”, Invited talk, ICAPS’14 Workshop on Models and Paradigms for Planning under Uncertainty

July, 2014, ”An Introduction to Classical Single and Multi-Agent Planning”, Invited Tutorial, European Agent Systems Summer School.

June, 2016, “Classical Multi-Agent Planning”, Invited Tutorial, International Summer School on Automated Planning and Scheduling.

(b) Presentations of papers at conferences or meetings

1. Please see list of papers in conference proceedings, above.

(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
- 2011 – “Multi-Agent Planning and Plan Decomposition”
  - \* Rutgers University, Rutgers NJ – Dept. of Computer Science
- 2013 – “Distributed Multi-Agent Planning”
  - \* University of Berscia, Italy – Dept. of Computer Science

- **Research grants**

- [2016-2017] PayPal: ”A Planning-based Approach to Malware Simulation and Detection”, \$200,000.
- [2016 – 2019] Israel Ministry of Science and Technology: ”An Autonomous Service Robot for the Elderly”, 1.2 million Israeli Shekels for 3 years. Lead PI. Co-PIs: Ohad Ben-Shahr, Michael Elhadad, Guy Hoffman, Guy Shani, and Oren Zuckerman
- [2014 – 2017] ABC Initiative, Ben-Gurion University: ”An Autonomous Service Robot”, \$100,000 for 3 years. With Ohad Ben-Shahr, Michael Elhadad, Guy Shani, and Amir Shapiro.
- [2013 – 2017] Israel Science Foundation: ”Contingent Planning”, \$50,000 per year. With Guy Shani.
- [2012 – 2016] Mafat: ”ROBIL” Approx \$ 50,000 per year (our part). Part of a large consortium of Israeli researchers.
- [2007 – 2011] Israel Science Foundation: ”Factored Planning”, \$50,000 per year. With Carmel Domshlak.
- [2007 – 2010] COST Action IC0602 ”Algorithmic Decision Theory.” Member of Management Committee representing Israel and Working Group Head. Budget: 100,000 Euro/year.
- [2006 – 2010] 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. I. Brafman, E. Gudes, M. Sipper, E. Shimony) received: (05/06): 450K NIS, (06/07): 900K NIS.
- [2006 – 2008] Deutshce 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. I. 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. Planning under Uncertainty
2. Distributed Planning
3. Monitoring techniques in robotics

- **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.
- Second International Conference on Algorithmic Decision Theory, DIMACS, Rutgers, USA (ADT’11) Program Chair, 2011.
- Twenty Fifth International Conference on Automated Planning and Scheduling, Jerusalem, Israel. (ICAPS’15) Conference Chair, 2015.

- (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.
- 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.
- International Conference on Planning and Scheduling Systems, 2011.
- Autonomous Agents and Multi-Agent Systems (AAMAS) 2011.
- IJCAI 2011, Barcelona. Area Chair.
- ICAPS 2012.
- AAAI 2012 – Senior Program Committee.
- ECAI 2012 – Area Chair.
- Conference on Uncertainty in AI, 2012.
- ICAPS 2013 – Senior Program Committee.
- IJCAI 2013 – Area Chair.
- ICAPS 2014 – Journal Track Chair.
- UAI 2014 – Program Committee Member.
- ICAPS 2015 – Program Committee Member.
- AAAI 2015 – Senior Program Committee.
- AAAI 2016 – Program Committee Member.

(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