

# Rina Dechter

Information and Computer Science  
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## Education

- *University of California, Los Angeles*  
Computer Science, Major Field: Artificial Intelligence  
Ph.D. 1985
- *Weizman Institute of Science, Rehovot, Israel*  
Applied Mathematics  
M.S. 1976
- *The Hebrew University of Jerusalem, Israel*  
Mathematics and Statistics  
B.S. 1973

## Work Experience

- *University of California, Irvine*  
Information and Computer Science  
July 1996–present: Full Professor  
July 1992–1996: Associate Professor  
Oct 1990–1992: Assistant Professor
- *Technion, Israel*  
Computer Science Department  
Oct 1988 - Sept 1990: Senior Lecturer, (equivalent to Assistant Professor)

- *Hughes Aircraft*, Calabasas  
July 85 - Mar 88: Staff member, AI Center
- *University of California, Los Angeles*  
Computer Science Department  
Oct 87 - Sept 88: Research Associate
- *University of California, Los Angeles*  
Computer Science Department  
July 85 - Sept 87: Presidential Postdoctoral Scholar
- *IBM Scientific Center*, Los Angeles, CA  
Sept 82 - Dec 84: Student member of Technical Staff, Robotic Project
- *University of California, Los Angeles*  
Computer Science Department  
July 81 - Sept 85: Research Assistant  
Research in the areas of Communication Networks (1981-1982), and  
Artificial Intelligence (1982-85)
- *Perceptronics Inc.* Woodland Hills, California  
Oct 78 - Mar 80: Research Mathematician  
Responsible for modeling, experimental design and computer simulations for Human-Resource Test and Evaluation for advanced weapon systems
- *Everyman's University*, Tel-Aviv, Israel  
Apr 76 - Aug 78: Staff member  
Developed self-study programs for teaching college mathematics.

### **Awards and Honors**

- 1986-87: UC Presidential Postdoctoral Fellowship.
- 1990: Best Paper, Canadian AI Conference (CSCSI-90) for [C15,J10]
- 1991: NSF Presidential Young Investigator.
- 1994: AAAI Fellow.
- 1999: Runner-up for Best student paper award in UAI99 for [C52].
- 2005-2006: Radcliffe Fellow.
- 2007: ACP (Association of Constraint Programming) research excellence award

- 2008: Bren School Dean's Excellence in Research award.
- 2009: Elected as co-editor in chief for the Artificial Intelligence Journal, starting January 2011.
- 2010: Won, with her students, the UAI 2010 Approximate Inference Challenge.

## **PROFESSIONAL ACTIVITIES**

### **Editorial Services:**

Co-Editor in chief: *Artificial Intelligence journal*, 2011–2015

Editorial board: *Logic in Computer Science (LMCS)*, 2004-present.

Editorial board: *CONSTRAINTS an International journal*, 1996-present.

Editorial board: *Journal of AI Research (JAIR)*, 1993-2000.

Editorial board: *Journal of AI Research (JAIR)*, Associate editor, 2006-2009.

Advisory board: *Journal of AI Research (JAIR)*, 2009-present.

Editorial Board: *Artificial Intelligence journal*, 1989–2008

**Guest editor Artificial Intelligence** Special issue on Heuristic search, April 2001 (with R. Korf and W. Zhang).

**Guest editor, Journal of CONSTRAINTS** Vol 8,3, 2003, special issue based on CP2000.

### **Community Services:**

AAAI Fellow selection committee, 1996-1999

Member of the executive Council of AAAI, 2000–2003

### **Program and/or Conference chair:**

Organizer and Chair: *Constraint-Processing*, AAAI workshop Detroit, MI, 1989

Organizer and Co-chair: *Constraint-based reasoning*, Spring 1991, Stanford.

Program chair of *Constraint Programming 2000* (CP2000).

Program co-chair of *National Conference of Artificial Intelligence, 2002* (AAAI2002).

Program co-chair of *Uncertainty in Artificial Intelligence, 2006* (UAI06)

Program co-chair of the *Evaluations of Inference in Uncertainty in Artificial Intelligence, 2006* (UAI06)

Conference co-chair of *Uncertainty in Artificial Intelligence, 2007* (UAI07)

Program co-chair of the *Evaluations of Inference workshop in Uncertainty in Artificial Intelligence, 2008* (UAI08)

### **Program committees:**

Invited meeting: ACM strategic meeting of future of computing, Constraint

Processing group, In MIT, Boston, June 1996.  
Technical program committee: AAAI 1991-2010  
Technical program committee: IJCAI (1991,95,97,99,01,03,05,07,09(area-chair))  
Technical program committee: BIFSI; Bar-Ilan Symposium on foundation of Artificial Intelligence (1989,91,93,98,99, 2005, 2007)  
Technical program committee: Uncertainty in AI (UAI) (1997,1998, 1999, 2001 (area chair), 2002,2003, 2004, 2005,2009,2010)  
Technical program of Knowledge Representation (KR-92,KR-94,KR-2002,KR-2004,KR-2007).  
Technical program committee: Constraint Programming (CP) (1995,1998, 1999, 2001, 2004, 2005, 2007, 2008,2009,2010).  
Technical program committee: International Symposium on Artificial Intelligence and Mathematics (ISAIM) (1989,1996,1998,2007,2009,2010)  
Technical program committee: AI and Planning (AIPS-2001,2003) (ICAPS, 2004, 2008,2010)

## **Referee**

Artificial Intelligence (AIJ), Journal of Artificial Intelligence research (JAIR), Journal of the Association for Computing Machinery (JACM), Communications of the Association for Computing Machinery (CACM), IEEE Transaction on PAMI, Information Processing Letters, Annals of Math and AI, National Science Foundation, Israel's Office of Science and Technology  
Ireland Science foundation

## **Courses Taught**

Introduction to Artificial Intelligence 1988-2009.  
Constraint Networks (1990-2010.)  
Belief Networks (1990-2010).  
Laboratory in Artificial Intelligence, (1988-2009).  
Discrete Mathematics, (1998-2004).

## **Ph.D Students**

### **Current Ph.D students**

- Natalia Flerova 2008-present
- Andrew Gelfand 2009-present

- William Lam 2010-present

### **Graduated Ph.D students**

- Lars Otten 2006-2013 "Extending the Reach of AND/OR Search for Optimization in Graphical Models"
- Vibhav Gogate, 2002-2009. "Sampling Algorithms for Probabilistic Graphical Models with Determinism"
- Radu Marinescu, 2001-2008. "AND/OR Search Strategies for Combinatorial Optimization in Graphical Models"
- Robert Mateescu 2000-2007. "AND/OR Search Spaces for Graphical Models."
- Bozhena Bidyuk 2001-2006. "Exploiting Graph Cutsets for Sampling-Based Approximations in Bayesian Networks."
- Kalev Kask, (1992- 2001) "Algorithms for Solving NP-hard Problems"
- Irina Rish, (1992-1999) "Efficient Reasoning in Graphical Models"
- Eddie Schwalb, (1991-1998) "Large-scale Applications of Temporal Constraint Networks"
- Dan Frost, (1991-1997) "Algorithms and Heuristics for Constraint Satisfaction Problems."
- Rachel Ben-Eliyahu, UCLA, (1990 - 1993), "Nonmonotonic Reasoning in Classical Logic." (co-chair with J. Pearl)
- Itay Meiri, UCLA, (1987 - 1992). "Temporal Constraint Networks." (co-chair with J. Pearl) Degree received Winter 1992

### **Postdoctoral students and researchers**

- Emma Rollon, Postdoc, December 2008-January 2010.
- Kalev Kask, 2001-2005, 2008-2010.
- Javier Larrosa, Postdoc (Spain), January 2000-December 2000.

- Dr. Lluís Vila, Postdoc (Spain), December 1994-1996
- Dr. Yousri El Fattah, Postdoc, October-December 1995.

### M.S. Advisees

Andrew Isbell 2010-present

Tuan Nguyen, 2007-2009.

David Larkin 2000-2004.

Nira Brand UCI, 1999-2001.

Rony Shapiro, Tel-Aviv University “On the complexity of interval-based constraints”, October 1997. (co-chaired with Yishai Feldman)

Zeev Collin, Technion, “Distributed Constraint Networks,” 1989 - 1991. Degree received, February, 1992

### Undergraduate supervised

Michael Ludwig, Honor student, “Bus scheduling using constraint networks,” Fall 1992.

Kyle Bolen, “REES: Reasoning Evaluation system Tool”, 2001-2002

Natalia Flerova, Fullbright student, 2007-2008 “Research in Artificial Intelligence”.

Andrew Isbell, 2010

### Extramural Funding Past and present

1. **NSF No. IIS-1065618**: co-PI “RI: Medium Approximation Algorithms for Probabilistic Graphical Models with Constraints” \$ 890,000 with Alex Ihler, 3/15/2011-3/15/2015
2. **NSF, IIS- 1025552**: PI “WORKSHOP-Heuristics, Probabilities and Causality: workshop in honor of Judea Pearl” \$20,224.00 4/15/2010-3/31/2011.

3. **NIH equipment supplement, HG004175:** PI. "Efficient Software and Algorithms for analyzing markers data on general pedigree" 8/2010-8/2011, \$99,989.00.
4. **UCTC award. Investigator. 2008-2009** "The Personal Travel Assistant (PTA): Measuring the dynamics of human travel behavior" PI Will Recker. \$ 63,421.
5. **NIH award, 1R01HG004175-01A1:** PI. "Efficient Software and Algorithms for analyzing markers data on general pedigree", 09/13/2007-06/30-2010. \$ 1,103,147. Co-PI Technion and University of Washington (PI's share is about 40%).
6. **NSF award:** "High Performance Algorithms for Probabilistic and Deterministic Graphical Models" IIS-0713118, August 15 2007-2010, \$449,713.
7. **NSF award:** "Strategies for high performance graph-based reasoning" 35165, July 2004-2007, \$450,000.
8. **NSF award:** Advanced Approximation Methods and Specification Schemes for Automated Reasoning 9610015, 2000-2003, \$410,000.
9. **MURI Award April 2000- April 2005:** Multi-disciplinary ONR Award N00014-00-1-0617. Co-PI (shared with UCLA and Urbana-Champaign), " An Integrated approach for decision making under uncertainty" 2,934,000 dollars. Irvine portion (with Sandy Irani as a co-PI) 798,883 dollars.
10. **Rockwell Micro 447441-53796**, 1998-99, \$15,000, "Diagnosis and planning using network based algorithms." **UC-Micro**, 447678-19907, 1998-99, \$8878, matching.
11. **Rockwell Micro 447651-53796**, 1997-98, \$15,000, "Diagnosis and planning using network based algorithms." **UC-Micro**, 447678-19907, 1997-98, \$8878, matching.
12. **NSF award:** Tractable reasoning, 9610015, 1997-2000, \$300,000.

13. **Airforce grant:** AFOSR 447651-22500, CO-PI with Mike Pazzani, July 1996-December 1997, \$138,454.
14. **Amada Micro** 447651-42022, 1996-97, \$15000.
15. **Rockwell Micro** 447651-53796, 1996-97, \$15,000, **UC-Micro**, 1996-97, \$19,056, matching.
16. **Rockwell International:** *Diagnosis and Planning using network-based algorithms.* UC MICRO, 95-043, 1995-96, \$15,000, \$10,716 matched by UC.
17. **Electrical Power Research Institute (EPRI):** *Constraint Processing for Electrical Power Problems.* 487650-59162, July 1994- June 97, \$97,500.
18. **Rockwell International:** 1994-95, \$10,000.
19. **Northrop:** 1994-95, \$5,000.
20. **NSF:** Characterizing tractable sub-problems in automated reasoning. IRI-9157636, \$125,000 plus industrial matching fund up to \$500,000. 8/1/91 - 7/31/96. **Presidential Young Investigator Award.**
21. **GE Corporate Research and Development:** Temporal networks and scheduling, 1/1992 - 12/31/92, \$15,000 (matched by NSF)
22. **Toshiba of America**, 1992-93, \$12,500; 1993-94, \$5000; 1994-95, \$5000 (matched by NSF)
23. **Xerox Corporation**, Palo Alto Research Center, 1992-93, \$10,000; 1993-94, \$10,000; 1994-95 \$10,000 (matched by NSF).
24. **NSF:** Studies in Heuristics. IRI-88-15522, 2/1989-7/30/90, \$170,000. Proposer and co-principle investigator (through UCLA with J. Pearl).
25. **AIR FORCE:** Dynamic Constraint-Networks, Air Force Office of Scientific Research. AFOSR 88 0177, 5/1/88 - 9/30/89;, \$59,972; 12/1/89 - 11/30/92, \$185,000. Proposer and Principal Researcher (through UCLA, with J. Pearl).



## Publications

### Referred Journal articles

- J1. Huyn, N., Dechter, R., and Pearl, J., “Probabilistic analysis of the complexity of A\*.” *Artificial Intelligence*, Vol. 15(3), 1980, pp. 241–254.
- J2. Dechter, R., and Pearl, J., “Generalized best-first strategies and the optimality of A\*.” *Journal of the ACM*, Vol. 32(3), July 1985, pp. 505–536.
- J3. Dechter, R., and Kleinrock, L., “Broadcast communication and distributed algorithms.” *IEEE Transaction on Computers*, Vol. C-35(3), March 1986, pp. 210–219.
- J4. Dechter, R., and Pearl, J., “Network-based heuristics for constraint-satisfaction problems.” *Artificial Intelligence*, Vol. 34(1), December 1987, pp. 1–38.
- J5. Dechter, R., and Pearl, J., “Tree-clustering schemes for constraint-processing.” *Artificial Intelligence*, Vol. 38(3), April 1989, pp. 353–366.
- J6. Dechter, A., and Dechter, R., “On the greedy solution of ordering problems.” *ORSA Journal on Computing*, Vol. 1(3), Summer 1989, pp. 181–189.
- J7. Dechter, R., “Enhancement schemes for constraint processing: Back-jumping, learning and cutset decomposition.” *Artificial Intelligence*, Vol. 41(3), January 1990, pp. 273–312.
- J8. Dechter, R., “Decomposing a relation into a tree of binary relations.” *Journal of Computer and System Sciences, Special Issue on the Theory of Relational Databases*, Vol. 41, 1990, pp. 2–24.
- J9. Dechter, R., Meiri, I., and Pearl, J., “Temporal constraint networks.” *Artificial Intelligence*, Vol. 49, 1991, pp. 61–95.

- J10. Dechter, R., “From local to global consistency.” (best paper award in the 8th Canadian AI Conference), *Artificial Intelligence Journal*, Vol 55, 1992, pp. 87–107.
- J11. Dechter, R. and Pearl, J., “Structure Identification in relational data.” *Artificial Intelligence*, Vol 58, 1992, pp. 237–270.
- J12. Ben-Eliyahu, R., and Dechter, R., “Propositional semantics for disjunctive logic programs.” In the *Journal of Annals of Mathematics and Artificial Intelligence*, Vol 12, 1994, pp. 53-87.
- J13. Dechter, R., and Meiri, I., “Experimental evaluation of preprocessing algorithms for constraint satisfaction problems” *Artificial Intelligence Journal*, Vol 68,2, 1994, pp. 211-241.
- J14. van Beek, P. Dechter R., “On the minimality and Decomposability of row-convex constraint networks”. *Journal of the ACM*, Vol 42, No. 3, May 1995, pp. 543–561.
- J15. Pinkas G., Dechter R. “On improving connectionist energy minimization” *Journal of Artificial Intelligence Research (JAIR)*, Vol 3, 1995, pp. 223-248.
- J16. Ben-Eliyahu, R., and Dechter, R., “On computing minimal models.” In *Annals of Math and AI*, Vol 18, 1996, pp. 3-27.
- J17. Dechter, R., and Dechter, A., “Structure driven algorithms for truth maintenance.” In the *Artificial Intelligence Journal* 82, (1996) 1-20.
- J18. Ben-Eliyahu R. and Dechter R. “Default Reasoning using classical logic” *Journal of Artificial Intelligence*, Vol. 84, 1996, pp. 113-150.
- J19. Meiri I., R. Dechter and Pearl, J., “Uncovering trees in constraint networks” *Artificial Intelligence*, Vol 86, (1996) 245-267
- J20. Schwalb E. and R. Dechter, “Processing Disjunctions in Temporal constraint networks” *Artificial Intelligence*, Vol 93(1-2) (1997) pp. 29-61.
- J21. Dechter R. and P. van Beek “Local and global relational consistency” *Journal of Theoretical Computer Science*, Vol 173(1), PP. 283-308, 1997.

- J22. van Beek P., Dechter R., “Constraint tightness and looseness versus local and global consistency” *Journal of ACM*, VOL 44, NO. 4, JULY 1997, PP. 549-566.
- J23. Dechter R. “Bucket elimination: a unifying framework for processing hard and soft constraints” *CONSTRAINT: An International Journal*, 2,51-55 (1997).
- J24. Frost D. and R. Dechter “Maintenance scheduling problems as benchmarks for constraint algorithms” *Annals of Mathematics & Artificial Intelligence*. 26(1-4):149-170, 1999.
- J25. Collin, Z., Dechter, R., and Katz, S., “Self-stabilizing distributed constraint satisfaction.” In the *Chicago Journal of Theoretical Computer Science* (CJTCS)  
<http://www.cs.uchicago.edu/publications/cjtcs/index.html>, December 1999.
- J26. Dechter R., “Bucket elimination: A unifying framework for reasoning .” *Artificial Intelligence*, 113 (1999) 41-85.
- J27. Rish I. and R. Dechter “Resolution vs. Search: Two approaches to SAT” in *Journal of Automated reasoning*, special issue on SAT, Volume 24, Issue 1/2, pp. 225-275, January, 2000.
- J28. Dechter R. and Y. El Fattah “Topological parameters for time-space tradeoff” *Artificial Intelligence* (125), 2001 pp. 93-188.
- J29. Kask K. and R. Dechter “A general scheme for automatic generation of search heuristics” *Artificial Intelligence*, 2001, pp. 91-131
- J30. Dechter R. and D. Frost “Backjumping-based algorithms for constraint satisfaction problems ” *Artificial Intelligence*, (136), 2002, pp. 147-188.
- J31. Javier Larrosa and R. Dechter ”Boosting search with variable elimination” *Constraints* 7(3-4): 407-419 (2002)
- J32. Dechter R. and I. Rish, “Mini-buckets; a general scheme for approximating inference,” *Journal of ACM*, JACM 50(2): 107-153 (2003).

- J33. Kask K, R. Dechter, J. Larrosa and A Dechter” Unifying Tree decompositions for reasoning in graphical models. *Artificial Intelligence*, 166(1-2): 165-193, 2005.
- J34. B. Bidyuk and R. Dechter. ”Cutset Sampling for Bayesian Networks”. *Journal of Artificial Intelligence research (JAIR)*, 28: 1-48, 2007.
- J35. R. Dechter and R. Mateescu. ”AND/OR Search Spaces for Graphical Models”. In *Artificial Intelligence Journal*, 171(2-3): 73-106, 2007.
- J36. R. Mateescu, R. Dechter and R. Marinescu ”AND/OR Multi-Valued Decision Diagrams (AOMDDs) for Graphical Models”, (*JAIR*), *J. Artif. Intell. Res. (JAIR)* 33: 465-519 (2008)
- J37. R. Marinescu and R. Dechter. ”Evaluating the Impact of AND/OR Search on 0-1 Integer Linear Programming.” *Constraints*, 2009.
- J38. R. Mateescu and R. Dechter ”Mixed Probabilistic and Deterministic Networks” *Anal. of Math and Artificial Intelligence*. 54(1-3): 3-51 (2008).
- J39. R. Marinescu and R. Dechter: AND/OR Branch-and-Bound search for combinatorial optimization in graphical models. *Artif. Intell.* 173(16-17): 1457-1491 (2009)
- J40 R. Marinescu and R. Dechter: Memory intensive AND/OR search for combinatorial optimization in graphical models. *Artif. Intell.* 173(16-17): 1492-1524 (2009)
- J41 V. Gogate and R. Dechter. ”SampleSearch: Importance Sampling in presence of Determinism.” *Artif. Intell.* 175(2): 694-729 (2011)
- J42 R. Mateescu, K. Kask, V. Gogate, and R. Dechter. ”Join-Graph Propagation Algorithms.” *Journal of Artificial Intelligence Research (JAIR)*, 37 (2010) 279-328.
- J43 Bozhena Bidyuk, Rina Dechter and Emma Rollon. ”Active Tuples-based Scheme for Bounding Posterior Beliefs” *Journal of Artificial Intelligence Research (JAIR)*, (2010) 1-38.

- J44 V. Gogate and R. Dechter "Importance Sampling based Estimation over AND/OR Search Spaces for Graphical Models", *Artif. Intell.* 184-185: 38-77 (2012).
- J45 Natalia Flerova, Emma Rollon, Rina Dechter: Bucket and Mini-bucket Schemes for M Best Solutions over Graphical Models. *GKR* 2011: 91-118
- J46 Vibhav Gogate, Rina Dechter: Sampling-based lower bounds for counting queries. *Intelligenza Artificiale* 5(2): 171-188 (2011)
- J47 Lars Otten, Rina Dechter: Anytime AND/OR depth-first search for combinatorial optimization. *AI Commun.* 25(3): 211-227 (2012)
- J48 Mark Silberstein, Omer Weissbrod, Lars Otten, Anna Tzemach, Andrei Anisenia, Oren Shtark, Dvir Tuberg, Eddie Galfrin, Irena Gannon, Adel Shalata, Zvi U. Borochowitz, Rina Dechter, Elizabeth Thompson, Dan Geiger: A system for exact and approximate genetic linkage analysis of SNP data in large pedigrees. *Bioinformatics* 29(2): 197-205 (2013)

### **Books**

- B1. Dechter, R. "Constraint Processing". Morgan Kaufmann, May 2003.

### **Edited volumes**

- EV1. Dechter, R. *Proceedings of Principles and Practice of Constraint Programming* Lecture notes in Computer Science "CP2000", 2000.
- EV2. Dechter R. and Michael Kearns *Proceedings of National Conference of Artificial Intelligence "AAAI2002"*, 2002
- EV3. Dechter R. and T. Richardson *Proceedings of the Uncertainty in Artificial Intelligence, "UAI2006"*, 2006.
- EV4. Dechter R., H. Geffner and J. Halper, Ed. *Heuristic, Probability and Causality: A tribute to Judea Pearl*. College Publications, March 2010,

### Chapters in Books, Peer reviewed

- BC1. Dechter, R., Dechter, A., and Pearl, J., "Optimization in constraint networks." In R. M. Oliver and J. Q. Smith (Eds.), *Influence Diagrams, Relief Nets and Decision Analysis*, Sussex, England: John Wiley & Sons, Ltd., 1990, pp. 411–425.
- BC2. Cohen, S., and Dechter, R., "Evaluating production systems in multi-processing environments." In Y. A. Feldman and A. Bruckstein (Eds.), *Artificial Intelligence and Computer Vision*, Elsevier Science Publishers (North Holland), 1991, pp. 285–300.
- BC3. Dechter, R., "Constraint networks." In *Encyclopedia of Artificial Intelligence*, 2nd ed., 1992, John Wiley & Sons, Inc., pp 276–285.
- BC4. A contributor author to the "Constraint Programming" by the Constraint Programming Working Group, ACM-MIT SDCR Workshop, Editors: Pascal Van Hentenryck and Vijay Saraswat, in ACM Computing surveys, 1997.
- BC5. R. Dechter "Constraint satisfaction" invited article to the *MIT Encyclopedia of the Cognitive Sciences (MITECS)*, Submitted June 1997.
- BC6. R. Dechter "Bucket elimination: A unifying framework for probabilistic reasoning" In M. I. Jordan (Ed.), *Learning in Graphical Models*, Kluwer Academic Press, 1998.
- BC7. Dechter R. and F. Rossi "Constraint Satisfaction" Nadel, L. (Ed), *Encyclopedia of Cognitive Science, 2000*, Nature publishing group, London, November 2002.
- BC8 Dechter R. "Tractable Structures for CSPs", In F. Rossi, P. van Beek, T. Walsh (Ed.) *Handbook of Constraint Programming*, Elsevier, 2006.
- BC9 R. Mateescu and R. Dechter "AND/OR Multi-Valued decision diagrams for Constraint Networks" in Honors of Ugo Montanari', Springer Verlag, June 2008: 238-257

- BC10 Dechter R., B. Bidyuk, R. Mateescu and E. Rollon "On the power of belief propagation: A constraint propagation perspective" R. Dechter, H. Geffner and J. Halpern (Ed.) *Heuristic, probability and Causality: A Tribute to Judea Pearl*. College Publications, 2010.

### Refereed Conference Proceedings

- C1. Dechter, R., and Pearl, J., "The optimality of A\* revisited." In *Proceedings of the National Conference on Artificial Intelligence (AAAI-83)*, Washington DC, August 1983, pp. 95–99.
- C2. Dechter R., and Pearl, J., "The anatomy of easy problems: A constraint-satisfaction formulation." In *Proceedings of the Ninth International Joint Conference on Artificial Intelligence (IJCAI-85)*, Los Angeles, CA, August 1985, pp. 1066–1072.
- C3. Dechter, R., and Dechter, A., "Properties of greedily optimized problems." In *Proceedings of the 6th Canadian Conference on Artificial Intelligence*, May 1986, pp. 245–250.
- C4. Dechter, R., "Learning while searching in constraint-satisfaction-problems." In *Proceedings of the Fifth National Conference on Artificial Intelligence (AAAI-86)*, Philadelphia, PA, August 1986, pp. 178–183.
- C5. Dechter, R., and Pearl, J., "The cycle-cutset method for improving search performance in AI applications." In *Proceedings of the 3rd IEEE Conf. on Artificial Intelligence Applications*, Orlando, FL, February 1987, pp. 224–230.
- C6. Dechter, A., and Dechter, R., "Removing redundancies in constraint networks." In *Proceedings of the Sixth National Conference on Artificial Intelligence (AAAI-87)*, Seattle, WA, July 1987, pp. 105–109.
- C7. Dechter, R., "Decomposing a relation into a tree of binary relations." In *Proceedings of the 6th Conference on Principles of Database Systems*, San Diego, CA, March 1987, pp. 185–189.
- C8. Dechter, R., Dechter, A., and Pearl, J., "Optimization in constraint-networks." In *Proceedings of the Conference on Influence Diagrams for Decision Analysis, Inference*, UC-Berkeley, CA, May 1987.

- C9. Dechter, R., and Pearl, J., “Constraint processing incorporating back-jumping, learning, and cutset decomposition.” In *Proceedings of the 4th IEEE Conf. on Artificial Intelligence Applications*, San Diego, CA, March 1988, pp. 312–319.
- C10. Dechter, R., and Pearl, J., “Tree clustering schemes for constraint processing.” In *Proceedings of the Seventh National Conference on Artificial Intelligence (AAAI-88)*, St. Paul, MN, August 1988, pp. 150–154.
- C11. Dechter, R., and Dechter, A., “Belief maintenance in dynamic constraint networks.” In *Proceedings of the Seventh National Conference on Artificial Intelligence (AAAI-88)*, St. Paul, MN, August 1988, pp. 37–42.
- C12. Pearl, J., and Dechter, R., “Learning structure from data: A survey.” In *Proceedings of the Workshop on Computational Learning Theory (COLT’89)*, Santa Cruz, CA, July 1989, pp. 230–244.
- C13. Dechter, R., Meiri, I., and Pearl, J., “Temporal constraint networks.” In *Proceedings of the First International Conference on Principles of Knowledge Representation and Reasoning (KR’89)*, Toronto, Canada, May 1989, pp. 83–93.
- C14. Dechter, R., and Meiri, I., “Experimental evaluation of preprocessing techniques in constraint satisfaction problems.” In *Proceedings of the Tenth International Joint Conference on Artificial Intelligence (IJCAI-89)*, Detroit, MI, August 1989, pp. 271–277.
- C15. Dechter, R., “From local to global consistency.” In *Proceedings of the 8th CSCSI (Canadian AI Conference)*, Ottawa, Canada, May 1990. Received a best paper award given by the AI Journal, pp. 231–237.
- C16. Meiri, I., Dechter, R., and Pearl, J., “Tree decomposition with applications to constraint processing.” In *Proceedings of the Eighth National Conference on Artificial Intelligence (AAAI-90)*, July 1990, Boston, MA, pp. 10–16.
- C17. Dechter, R., “On the expressiveness of networks with hidden variables.” In *Proceedings of the Eighth National Conference on Artificial Intelligence (AAAI-90)*, July 1990, Boston, MA, pp. 556–562.



- C18. Ben-Eliyahu, R., and Dechter, R., “Default logic, propositional logic and constraints.” In *Proceedings of the Ninth National Conference on Artificial Intelligence (AAAI-91)*, Anaheim, CA, July 1991, pp. 379–385.
- C19. Dechter, R., and Pearl, J., “Directed constraint networks: A relational framework for causal modeling.” In *Proceedings of the Twelfth International Joint Conference of Artificial Intelligence (IJCAI-91)*, Sidney, Australia, August 1991, pp. 1164–1170.
- C20. Collin, Z., Dechter, R., and Katz, S., “On the feasibility of distributed constraint satisfaction.” In *Proceedings of the Twelfth International Joint Conference of Artificial Intelligence (IJCAI-91)*, Sidney, Australia, August 1991, pp. 318–324.
- C21. Dechter, R., and Pearl, J., “Structure identification in relational data.” In the *Canadian Artificial Intelligence Conference*, May 1992, Vancouver, British Columbia, pp. 176–182.
- C22. Ben-Eliyahu, R., and Dechter, R., “Inferences in inheritance networks, using propositional logic and constraint networks techniques.” In the *Canadian Artificial Intelligence Conference (AI-92)*, Vancouver, British Columbia, May 1992, pp. 183–189.
- C23. Ben-Eliyahu, R., and Dechter, R., “Propositional semantics for disjunctive logic programs.” In the *Joint International Conference and Symposium on Logic Programming*, Washington D.C., November 1992, pp. 813–827.
- C24. Ben-Eliyahu, R., and Dechter, R., “Propositional semantics for default logic.” In the *Fourth International Workshop on Nonmonotonic Reasoning*, Plymouth, Vermont, May 1992.
- C25. Pinkas, G., and Dechter, R., “An improved connectionist activation function for energy minimization. ” In *The National Conference on Artificial Intelligence*, San Jose, CA, July 1992, pp. 434–439.
- C26. Ben-Eliyahu, R., and Dechter, R., “On computing minimal models.” In *The National Conference on Artificial Intelligence, AAAI-93*, Washington, DC, July 1993, pp. 2–8.

- C27. Schwalb, E., and Dechter, R., “Coping with disjunctions in temporal constraint satisfaction problems.” In *The National Conference on Artificial Intelligence, AAAI-93*, Washington, DC, July 1993, pp. 127–132.
- C28. Dechter R., and Schwalb E., “Compiling relational data into disjunctive structure: Empirical evaluation” In *AI/GI/VI-94* Banff, Alberta, Canada, May 1994, pp. 71-78.
- C29. van Beek P. and Dechter R., “Constraint tightness versus global consistency.” In *Principles of Knowledge Representation and Reasoning (KR-94)*, Bon, Germany, May 1994, pp. 572-582.
- C30. Dechter, R., and Rish I., “Directional resolution: the Davis Putnam procedure, revisited.” In *Principles of Knowledge Representation (KR-94)*, Bon, Germany, May 1994, pp. 134-145.
- C31. Frost, D., and Dechter R., “Dead-end driven learning” In *Proc. of the Twelfth National Conference of Artificial Intelligence, AAAI-94*, Seattle, WA, August 1994, pp. 294-300.
- C32. Frost, D., and Dechter R., “In search of best search; an empirical evaluation” In *Proc. of the Twelfth National Conference of Artificial Intelligence, AAAI-94*, Seattle, WA, August 1994, pp. 301-306.
- C33. Schwalb E., Kask K., and Dechter R., “Reasoning with constraints on fluents and event” In *The Twelfth National Conference of Artificial Intelligence, AAAI-94*, Seattle, WA, August 1994, pp. 1067-1072.
- C34. Kask K. and R. Dechter “GSAT and local consistency” In *International Joint Conference on Artificial Intelligence, IJCAI-95*, Montreal, Canada, August 1995, pp. 616-622.
- C35. El Fattah Y. and R. Dechter “Diagnosing tree-decomposable circuits” In *International Joint conference on Artificial Intelligence, IJCAI-95*, Montreal, Canada, August 1995, pp. 1742-1748.
- C36. Frost D. and R. Dechter “Look-ahead value ordering for constraint satisfaction problems” In *International Joint conference on Artificial Intelligence, IJCAI-95*, Montreal, Canada, August 1995, pp. 572-578.

- C37. Dechter R. and van Beek P. “Local and Global Relational consistency” In *First International Conference on Principles and Practice of Constraint Programming -CP’95* Cassis, France, September 1995, pp. 240–257.
- C38. Kask K. and Dechter R. “Graph-based method for improving GSAT” In *Proceedings of National Conference of Artificial Intelligence AAAI96*, Portland Oregon, August 1996.
- C39. Dechter R. “Topological parameters for time-space tradeoff” In *Uncertainty in Artificial Intelligence, UAI96*, Portland Oregon, August, 1996, pp. 220-227.
- C40. El Fattah Y. and Dechter R. “An evaluation of structural parameters for probabilistic reasoning: results on benchmark circuits” In *Uncertainty in Artificial Intelligence, UAI96*, Portland Oregon, August, 1996, pp. 244-251.
- C41. Dechter R. “Bucket elimination: A unifying framework for probabilistic inference” In *Uncertainty in Artificial Intelligence, UAI96*, Portland Oregon, August, 1996, 211-219.
- C42. Pearl J. and Dechter R. “Identifying independencies in causal graphs with feedback” In *Uncertainty in Artificial Intelligence, UAI96*, Portland Oregon, August, 1996, pp. 420-426.
- C43. Frost D. and Dechter R. “Looking at full look-ahead” In *International Conference on Constraint programming, CP96*, Boston, September, 1996, pp. 539-540.
- C44. Rish I. and Dechter R. “To guess or to think? hybrid algorithms for SAT” In *International Conference on Constraint programming, CP96*, Boston, September, 1996, pp. 555-556.
- C45. Dechter R and I. Rish. “A scheme for approximating probabilistic inference” In *Uncertainty in Artificial Intelligence, UAI97*, August 1997, pp. 132-141.
- C46. Dechter R. “Mini-Buckets: A general scheme for generating approximations in automated reasoning” *Proceedings of the fifteenth International*

*Joint Conference of Artificial Intelligence (IJCAI-97)*, Japan, 1997, pp. 1297-1302.

- C47. Frost D. and R. Dechter “Optimizing with constraints: a case study in scheduling maintenance of electric power units. ” In *International conference on Constraint Programming, CP98*, Pisa, Italy, October, 1998.
- C48. Kask K. I. Rish and R. Dechter. “Approximating algorithms for probabilistic decoding” In *Uncertainty in Artificial Intelligence, UAI98*, 1998.
- C49. R. Shapiro, Y.A. Feldman and R. Dechter “On the complexity of interval-based constraint networks” In MISC99 workshop on applications on interval analysis to systems and control, February 1999, pp. 389-399.
- C50. Kask K. and R. Dechter. “Stochastic local search for bayesian networks” In *Workshop on AI and Statistics 99*, D. Heckerman and J. Whittaker Ed. Morgan Kaufmann Publishers, pp 113-122, January 2000.
- C51. K. Kask and R. Dechter “Branch and bound with mini-bucket heuristics” in *International Joint Conference on Artificial Intelligence (IJCAI99)*, pp. 426-433, Stockholm, August 1999.
- C52. K. Kask and R. Dechter “On the power of mini-bucket heuristics” IN *UAI99*, Stockholm, July 1999.
- C53. R. Dechter “A new perspective on algorithms for optimizing policies under uncertainty” In *AI and Planning (AIPS2000)*, April, 2000.
- C54. J. Larrosa and R. Dechter, ”Boosting Search With Variable Elimination” In the proceedings of the ”Sixth International Conference on Principles and Practice of Constraint Programming” (CP2001), September, 2001.”
- C55. Kask K. and R. Dechter, ”New Search Heuristics For Max-CSP” In the proceedings of the ”Sixth International Conference on Principles and Practice of Constraint Programming” (CP2001), September, 2001, pp. 255-269

- C56. R. Dechter and D. Larkin “Hybrid processing of beliefs and constraints” *Proceeding of Uncertainty in Artificial Intelligence UAI-2001*, pp. 112-119.
- C57. R. Dechter, J. Larrosa and K. Kask “A general scheme for multiple lower bound computation in Constraint Optimization” In *Constraint Programming (PC2001)*, 2001, pp. 346-360
- C58. R. Dechter, K. Kask and R. Mateescu ”Iterative Join-graph propagation” *Proceeding of Uncertainty in Artificial Intelligence*, UAI-2002, pp. 128-136.
- C59. R. Dechter, K. Kask, E. Bin and R. Emek ”Generating random solutions for constraint satisfaction problems” *Proceedings of the National Conference on Artificial Intelligence, AAAI-02*, 2002, pp. 15-21.
- C60. R. Mateescu, R. Dechter, and K. Kask, ”Tree approximation for belief updating” *Proceedings of the National Conference on Artificial Intelligence, AAAI-02*, 2002, pp. 553-559.
- C61. D. Larkin and R. Dechter ”Bayesian Inference in the presence of determinism” *AI and statistics, (AISTAT03)*, Florida, 2003.
- C62. R. Dechter, and R. Mateescu. ”A Simple Insight Into Properties Of Iterative Belief Propagation”. *Uncertainty in AI*, UAI’03, pp. 175-183 2003.
- C63. B. Bidyuk and R. Dechter ”An Empirical Study of w-Cutset Sampling for Bayesian Networks”. *Uncertainty in AI*, UAI’03, pp. 37-46, 2003.
- C64. R. Marinescu, K. Kask, and R. Dechter. ”Systematic vs. Non-systematic Algorithms for Solving the MPE Task”. *Uncertainty in AI*, UAI’03, 394-402, 2003.
- C65. B. Bidyuk and R. Dechter. ”Cycle-Cutset sampling for Bayesian Networks”, *Canadian AI Conference, CAI03*, 297–312, 2003.
- C66. R. Dechter and R. Mateescu. ”Mixtures of Deterministic-Probabilistic Networks and their AND/OR Search Space”. *Uncertainty in AI*, UAI’04, pages 120-129, 2004.

- C67. B. Bidyuk and R. Dechter. "On finding minimal w-cutset problem". *Uncertainty in AI*, UAI'04, pages 43-50, 2004.
- C68. V. Gogate and R. Dechter. "A Complete Anytime Algorithm for Treewidth". *Uncertainty in AI*, UAI'04, pages 201-208, 2004.
- C69. K Kask, R Dechter, and V. Gogate. "Counting-Based Look-Ahead Schemes for Constraint Satisfaction". *Constraint Programming (CP'2004)*, pages 317-331.
- C70. R. Dechter and R. Mateescu. "The Impact of AND/OR Search Spaces on Constraint Satisfaction and Counting". *Constraint Programming, CP'2004* pages 731-736.
- C71. V. Gogate, R. Dechter, B. Bidyuk, C. Rindt and J. Marca. "Modeling Transportation Routines using Hybrid Dynamic Mixed Networks". *Uncertainty in AI, UAI 2005* pages 217-224.
- C72. V. Gogate and R. Dechter. "Approximate Inference Algorithms for Hybrid Bayesian Networks with Discrete Constraints". *Uncertainty in AI, UAI 2005* pages 209-216.
- C73. R. Mateescu and R. Dechter. "The Relationship Between AND/OR Search Spaces and Variable Elimination". *Uncertainty in AI, UAI 2005* pages 380-387.
- C74. R. Mateescu and R. Dechter. "AND/OR Cutset Conditioning". *the Nineteenth International Joint Conference on Artificial Intelligence, IJCAI'2005* pages 230-235.
- C75. R. Marinescu and R. Dechter. "AND/OR Branch-and-Bound for Graphical Models". *Nineteenth International Joint Conference on Artificial Intelligence, IJCAI'2005* pages 224-229.
- C76. R. Marinescu and R. Dechter. "AND/OR Branch-and-Bound Search for Pure 0/1 Integer Linear Programming Problems". In *Constraint Programmon, Artificial Intelligence and Operations Research (CPAIOR'06)*, 2006 pages 152-166.

- C77. R. Marinescu and R. Dechter. "Memory Intensive Branch-and-Bound Search for Graphical Models". In *National Conference of Artificial Intelligence (AAAI'06)*, 2006.
- C78. B. Bidyuk and R. Dechter. "Cutset Sampling with Likelihood Weighting". In *Uncertainty in AI, UAI 2006 (UAI'06)*.
- C79. B. Bidyuk and R. Dechter. "Improving Bound Propagation". In *European Conference on Artificial Intelligence (ECAI'06)*, 2006 pages 342-346.
- C80. R. Marinescu and R. Dechter. "Dynamic Orderings for AND/OR Branch-and-Bound Search in Graphical Models". In *European Conference on Artificial Intelligence (ECAI'06)*, 2006, pages 138-142.
- C81. B. Bidyuk and R. Dechter. "An Anytime Scheme for Bounding Posterior Beliefs". In *National Conference of Artificial Intelligence (AAAI'06)*.
- C82. R. Mateescu and R. Dechter. "Compiling Constraint Networks into AND/OR Multi-Valued Decision Diagrams (AOMDDs)". In *Principles and Practice of Constraint Programming (CP'06) 2006*, pages 329-343.
- C83. V. Gogate and R. Dechter. "A New Algorithm for Sampling CSP Solutions Uniformly at Random". In *Principle and Practice of Constraint Programming (CP'06) 2006*, pages 711-715.
- C84. R. Mateescu and R. Dechter. "A Comparison of Time-Space Schemes for Graphical Models". In *International Joint Conference of Artificial Intelligence (IJCAI 2007)*, pages 2346-2352.
- C85. V. Gogate and R. Dechter. "SampleSearch: A scheme that searches for consistent samples". In *Artificial Intelligence and Statistics (AISTAT, 2007)*.
- C86. R. Marinescu and R. Dechter. "Best-First AND/OR Search for 0/1 Integer Programming" *Constraint Programming, Artificial Intelligence and Operations Research (CPAIOR'07)* 2007: 171-185
- C87. R. Mateescu and R. Dechter. "AND/OR Multi-Valued Decision Diagrams (AOMDDs) for Weighted Graphical Models". In *UAI'07*.

- C88. V. Gogate, B. Bidyuk and R. Dechter. "Studies in Lower Bounding Probability of Evidence using the Markov Inequality". In UAI'07.
- C89. R. Marinescu and R. Dechter. "Best-First AND/OR Search for Most Probable Explanations". In UAI'07.
- C90. R. Marinescu and R. Dechter. "Best-First AND/OR Search for Graphical Models". In AAAI'07, pages 1171-1176, 2007.
- C91. V. Gogate and R. Dechter. "Approximate Counting by Sampling the Backtrack-free Search Space". In AAAI'07, pages 198-203, 2007.
- C92. R. Mateescu, R. Marinescu and R. Dechter. "AND/OR Multi-Valued Decision Diagrams (AOMDDs) for Constraint Optimization". In *Principles and Practice of Constraint Programming (CP'07)*, pages 498-513, 2007.
- C93. V. Gogate and R. Dechter. "Studies in Solution Sampling" In Association of Advancement of Artificial Intelligence (AAAI'08), 271-276, 2008.
- C94. L. Otten and R. Dechter, "Bounding Search Space Size via (Hyper)tree Decompositions." In Uncertainty in Artificial Intelligence (UAI'08), 2008.
- C95. V. Gogate and R. Dechter, "AND/OR Importance Sampling." In Uncertainty in Artificial Intelligence (UAI'08), 2008.
- C96. R. Dechter, L. Otten, and R. Marinescu. "On the Practical Significance of Hypertree vs. Tree Width." In European Conference on Artificial Intelligence (ECAI'08), 2008.
- C97. L. Otten and R. Dechter. "Refined Bounds for Instance-Based Search Complexity of Counting and Other #P Problems." In Constraint Programming (CP'08), pages 576-581 2008.
- C98. V. Gogate and R. Dechter, "Approximate Solution Sampling (and Counting) on AND/OR spaces", In Constraint Programming (CP'08), pages 534-538 2008.



- C99. L. Otten, R. Dechter, M. Silberstein, and D. Geiger. "Maximum Likelihood Haplotyping through Parallelized Search on a Grid of Computers." In RECOMB'09.
100. V. Gogate and R. Dechter. "On Combining Graph-based Variance Reduction schemes" In AISTATS'2010.
101. E. Rollon and R. Dechter. "New Mini-Bucket Partitioning Heuristics for Bounding the Probability of Evidence" AAAI 2010.
102. K. Kask, R. Dechter and A. E. Gelfand. "BEEM : Bucket Elimination with External Memory" in UAI'2010.
- 103 L. Otten and R. Dechter. "Finding Most Likely Haplotypes in General Pedigrees through Parallel Search with Dynamic Load Balancing" in PSB 2011, Pacific Symposium on Biocomputing, 2011.
- 104 Kalev Kask, Andrew E. Gelfand, Lars Otten, and Rina Dechter. "Pushing the Power of Stochastic Greedy Ordering Schemes for Inference in Graphical Models" in Proceedings of AAAI 2011.
- 105 Andrew E. Gelfand, Kalev Kask, and Rina Dechter. "Stopping Rules for Randomized Greedy Triangulation Schemes" in Proceedings of AAAI 2011.
- 106 Lars Otten and Rina Dechter. "Anytime AND/OR Depth-rst Search for Combinatorial Optimization" in Proceedings of SoCS 2011.
- 107 Rina Dechter, Natalia Flerova, and Radu Marinescu. "Search Algorithms for m Best Solutions for Graphical Models" in Proceedings of AAAI 2012.
- 108 Alexander Ihler, Natalia Flerova, Rina Dechter, and Lars Otten. "Join-graph based cost-shifting schemes" in Proceedings of UAI 2012.
- 109 Lars Otten and Rina Dechter. "A Case Study in Complexity Estimation: Towards Parallel Branch-and-Bound over Graphical Models" in Proceedings of UAI 2012.
- 110 Levi H.S. Lelis, Lars Otten and Rina Dechter. "Predicting the Size of Depth-First Branch and Bound Search Trees." to appear in IJCAI'13.

### Other Conference Papers

- OC1. Dechter, R., and Dechter, A. “Constraint-based belief-maintenance and its application to diagnosis.” *Proceedings of the 5th Israeli Symposium on Artificial Intelligence*, Tel-Aviv, Israel, December titled 1988, pp. 2–15.
- OC2. Dechter, R., “A distributed algorithm for ATMS.” In *Bar-Ilan Symposium on Foundation of AI* (BISFAI-89), June 1989.
- OC3. Collin, Z., and Dechter R., “A distributed solution to the network consistency problem.” In *Proceedings of the Fifth International Symposium on Methodologies for Intelligent Systems* (ISMIS’90), Knoxville, TN, October 1990, pp. 242–251. (part of refereed conferences #20).
- OC4. Dechter, R., “When is local consistency sufficient.” In *Proceedings of the Fifth International Symposium on Methodologies for Intelligent Systems* (ISMIS’90), Knoxville, TN, October 1990, pp. 142–148. (same as journals #10)
- OC5. Collin, Z., and Dechter R., “Making the network consistency problem distributed.” In the *Seventh Israeli Conference on Artificial Intelligence Vision and Pattern Recognition* (IAAI-90), Israel, December 1990.
- OC6. Dechter, R., and Itai, A., “Finding all solutions if you can find one.” Presented in the *Workshop on Tractable Reasoning*, AAAI-92, San Jose, CA, July 1992 pp. 35–39.
- OC7. El Fattah, Y., and Dechter, R., “Empirical evaluation of diagnosis as optimization in constraint networks.” In *Workshop on Principles of Diagnosis* (DX-92), Rosario, Washington, October 1992, pp. 149–158.
- OC8. I. Rish and Rina Dechter ”Variable independence in Markov decision problems” IN *Working notes for the AAAI-96 Workshop on structural planning and temporal reasoning* Portland, Oregon, 1996.
- OC9. D. Frost and R. Dechter, “Optimization with Constraints: a case study in scheduling maintenance of electric power units.” In the *Fifth International Symposium on Artificial Intelligence and Mathematics*, Florida, January 1998.

- OC10. K. Kask, R. Dechter and V. Gogate. "New Look-Ahead Schemes for Constraint Satisfaction". In The Eighth International Symposium on Artificial Intelligence and Mathematics, 2004.
- OC11. M. S. Pini, F. Rossi, K. B. Venable, and R. Dechter. "Robust Solutions in Unstable Optimization Problems." 13th Annual ERCIM International Workshop on Constraint Solving and Constraint Logic Programming, CSCLP'08 in Rome, Italy. Revised Selected Papers appeared as Recent Advances in Constraints, July 2009.
- OC12. R. Marinescu and R. Dechter. "Advancing AND/OR Search for Optimization." In Workshop on Optimization for Graphical Models" a NIPS workshop, NIPS, 2009. 2008.
- OC13. E. Rollon and R. Dechter. "Evaluating Partition Strategies for Mini-Bucket Elimination." In the 11th International Symposium on AI and Math (ISAIM'2010), January 2010.
- OC14. L. Otten and R. Dechter. "Towards Parallel Search for Optimization in Graphical Models." In the 11th International Symposium on AI and Math (ISAIM'2010), January 2010.
- OC15. N. Flerova and R. Dechter. "M best solutions over Graphical Models" in CRAGS'10 Workshop
- OC16. L. Otten and R. Dechter. "Finding Most Likely Haplotypes in General Pedigrees through Parallel Search with Dynamic Load Balancing" in SofT'10 and CRAGS'10, workshops, in Constraint Programming (CP2010), 2010.

**Workshops and Technical Reports, not published elsewhere**

- WT1. Gillis, D. J., Weiss, P., and Dechter, R., "Moments of the general epidemic model." *Technical Report*, Weizman Institute of Science, Rehovot, Israel, 1976.
- WT2. Dechter, R., and Michie, D., "Structured induction of plans and programs." *Lab Report*, IBM Scientific Center, Los Angeles, CA, October, 1984.

- WT3. Dechter, A., and Dechter, R., “Minimal constraint graphs.” *Technical Report CSD-870007 (R-74)*. UCLA, Cognitive Systems Laboratory, December 1986.
- WT4. Schwalb E., Vila, L. and Dechter R. “Temporal reasoning based on constraint logic programming”. Technical Report, 1997.
1. Schwalb E. and Dechter R. “Processing temporal constraint networks” In *Time-96* Florida, May 1996.
- WT5. Jagota A. and Dechter R. “Distributed algorithms for the cycle-cutset problem”
- WT6. D. Frost and R. Dechter, “Evaluating Constraint Processing Algorithms ” In *Workshop on Combinatorial Search and Planning of the Fourth International Conference on Artificial Intelligence Planning Systems (AIPS '98)*, Carnegie Mellon University, June, 1998.
- WT7. R. Dechter “An anytime approximation for optimizing policies under uncertainty” In workshop on decision theoretic planning in AIPS2000.
- WT8. J. Larrosa and R. Dechter ”On the dual representation of non-binary semiring-based cps” In workshop on soft constraints of the ”Sixth International Conference on Principles and Practice of Constraint Programming (CP2000), September 2000.
- WT9. R. Menke and R. Dechter ”An implementation of the combinatorial auction problem in Eclipse” Appeared as a student poster in AAAI2000. An ICS technical report.
- WT10. H. Zhao and R. Dechter “Belief updating using mini-bucket heuristics”, December 1999, ICS Technical report.
- WT11. R. Dechter and P. Smyth “ Processing Boolean queries over belief networks”, ICS Technical report, February 2000.
- WT12. B. Bidyuk and R. Dechter ”epsilon-cutset for iterative belief propagation” Technical report, ICS, May 2002.
- WT13. R. Mateescu and R. Dechter ”Hybrid optimization...” In Workshop on Inference near ECAI 2008.

## Invited Talks and Tutorials National

- Tutorial “Constraint-Directed Reasoning,” Tutorial speaker (with Mark Fox), National Conference of Artificial Intelligence, 1988.
- Invited seminar “Tractable classes for automated reasoning” Computer Science Department, Harvard University, November 1992.
- Seminar “Tractable reasoning for automated reasoning” Information Science Institute, Santa Monica, November 1993.
- Invited talk “In search of Tractable Islands” invited speaker in National Conference of Artificial Intelligence, (AAAI94), August 1994.
- Invited speaker “In search of tractable islands” University of California, Riverside, October 1994.
- Seminar “In search of tractable island” University of California, Los Angeles, December 1994.
- panelist “Systematic vs. stochastic constraint satisfaction”, IJCAI-1995.
- Invited tutorial “Bucket elimination: A unifying scheme of probabilistic reasoning,” Invited tutorial, Uncertainty in AI, Summer, 1997.
- Invited lecture “Maintenance scheduling of electric power units; a case study in constraint processings” special session on Constraints in the *Fifth International Symposium on Artificial Intelligence*, January 1998, Florida.
- Tutorial speaker “Principles and methods for automated inference,” Tutorial speaker (with Irina Rish), AAAI-98, August 1998.
- Seminar “Heuristic generation using variable elimination algorithms” in University of Arizona, March 1999.
- Seminar “Algorithms for solving constraint optimization” Tutorial Speaker in Constraint Programming (CP98), October 1998, Pisa, Italy.
- Invited lecture Dimacs, April 1999.

- Invited speaker "logic-based AI", Washington June 1999. organized by Jack Minker and John McCarthy.
- Distinguished speaker "Adaptive Time-Space Allocation for Automated Reasoning" In University of Washington, St. Lluís.
- Invited lecture "From satisfaction to optimization through inference and search" IBM Research T.J. Watson, June 2000.
- Invited colloquium "Adaptation, Inference and search for automated reasoning" Distinguished speaker, Urbana-Champaign, April 2001.
- Invited keynote address "Probabilistic vs deterministic networks: a look at the interface" AAAI Fall Symposium, November 2001.
- Invited keynote address "Probabilistic vs deterministic networks: a look at the interface" Constraint Programming conference, CP2002, September 2002,
- Seminar "Systematic vs non-systematic algorithms for constraint optimization" Artificial Intelligence Laboratory at the Swiss Federal Institute of Technology in Lausanne. July 2003
- Invited keynote speaker "On The Feasibility Of Distributed Constraint Satisfaction" Workshop on distributed CSP" in IJCAI-2003, August 2003.
- Invited keynote address. Conference on Nonmonotonic reasoning (LPNMR04), Fort Lauderdale, January 2004. "Probabilistic vs. deterministic Networks: A Look at the Interface"
- Invited Tutorial "Constraint processing: The graphical models perspective", Uncertainty in AI (UAI04) 2004.
- Seminar "Advanced algorithms for graphical models" Columbia University, May 2004
- Seminar "Advanced algorithms for graphical models" University of Maryland, September 2004.
- Invited lecture "Advanced algorithms for graphical models", Caltech University, December 1st 2004

- Invited Tacher Lecturer , "Advanced reasoning in graphical models", Kentucky University, March 3rd 2005
- Invited colloquim , "Advanced reasoning in graphical models", Harvard university, May 5th, 2005
- Invited colloquim , "Advanced reasoning in graphical models", Tufts, September 2005.
- Invited colloquim , "Advanced reasoning in graphical models", Brown University, January, 2006.
- Invited colloquim , "Advanced reasoning in graphical models", Amherst University, May 2006
- Tutorial ICAPS 2007 "Advances in constraint Optimization, Providence, Rod Island, September 2007.
- ACP award lecture "How I got into constraints: some of the early milestones", CP 2007, Providence, Rod Island, September 2007.
- Invited Colloquim , "Advanced reasoning in graphical models", USC, 2008.
- Invited Colloquim , "AND/OR search spaces for probabilistic and deterministic graphical models", University of Nebraska, Lincoln, April, 2009.
- Tutorial with R. Marinescu, Simon De Givry and Thomas Schiecs, "Combinatorial Optimization in Graphical Models" IJCAI, Pasadena, July, 2009.
- Invited Speaker "Advanced Strategies for Processing Mixed Probabilistic and Constraint-Based Graphical Models" CoProD'09 (Constraint Programming NSF workshop in University of Rexas, El Paso, November, 2009.
- Invited Colloquim , "AND/OR search spaces for probabilistic and deterministic graphical models", University of Washington, Seattle, January, 2010.
- Invited Talk "On the power of belief propagation: A constraint propagation perspective", In Symposium in honor of Judea Pearl, March 2010.
- invited seminar "SampleSearch: Importance Sampling in the presence of Determinism", in University of Maryland, June, 2010.

Tutorial with V. Gogate and B Bidyuk, "Sampling Techniques for Probabilistic and Deterministic Graphical models", AAAI, Atlanta, July 2010.

### **International**

Invited lecture "Constraint Networks: Techniques and Applications," Invited speaker for EDF: Electrecite de France, January 1989.

Invited lecture "Bucket elimination; a unifying framework for automated reasoning," Ben-Gurion University, Beer-Sheva, Israel, November 1996.

Seminar "Bucket elimination; a unifying framework for automated reasoning," Tel-Aviv University. Tel-Aviv, Israel, January 5, 1997.

Seminar "Bucket elimination; a unifying framework for automated reasoning," Technion, Haifa, Israel, January 7, 1997.

Invited keynote address "Bucket elimination; a unifying framework for hard and soft constraints," keynote speaker, ERCIM Working group on Constraints meeting, Institute Henri Poincaré, Paris, France, January 14th, 1997.

Seminar "Bucket elimination; a unifying framework for automated reasoning", Hebrew University, Jerusalem, Israel, April 6th, 1997.

Seminar "Bucket elimination; a unifying framework for hard and soft constraints," Royal Holloway College, London April 24, 1997.

Seminar "Bucket elimination; a unifying framework for automated reasoning," INRIA, Paris April 28, 1997.

Invited keynote address "Constraint Networks, Past and Present, 13th Israeli symposium on Artificial Intelligence and Computer Vision and Neural Network, Tel-Aviv, Israel February 3-4, 1997

Seminar "Bucket elimination; a unifying framework for automated reasoning," Weizmann Institute, Rehovot, Israel, June 24, 1997.

Seminar "Bucket elimination; a unifying framework for automated reasoning", University of Warsaw, Poland July 2nd, 1997.



- seminar "On generating heuristic mechanically" in Tel-aviv university, May 1999.
- Invited lecture "Solving NP-hard reasoning problems in AI" Invited speaker to JIM99 in Metz, France, May 1999.
- Invited lecture "From satisfaction to optimization through inference and search" Invited speaker to Haifa IBM Research center, August 2000.
- Invited lecture "Exploiting tree-decomposition in search: The AND/OR paradigm" Workshop on graphs and hypergraphs, Vienna, December 2004.
- Tutorial (with A. Darwiche and H. Geffner) "Principles of AI problem solving" in Ijcai-2005.
- Tutorial "Advances in Constraint Optimization" in CP-2005, Sitges, Spain, September 2005.
- Invited keynote talk "On Mixed Probabilistic and Deterministic Graphical Models" Changes'05 CP workshop, September 2005.
- Invited course 2006 UPF Course on Principles of AI Problem Solving: Inference and Search in Graphical Models (Constraint and Probabilistic Bayesian Networks), Universitat Pompeu Fabra, Barcelona, March 27-31, 2006.
- Invited speaker "Advances in Graphical models" Workshop on Inference Methods based on graphical structure of knowledge (WIGSK'06) in European Conference on Artificial Intelligence (ECAI06), August 2006
- Invited speaker "From AND/OR Search to AND/OR BDDs" Workshop on Constraints and Verification, Isaac Newton Institute for Mathematical Sciences, May 8-12, 2006 Cambridge, England.
- invited speaker "A new scheme for generating random solutions" IBM Scientific Research center, Haifa, Israel, January, 2008.
- Seminar "From Constraint Programming to Graphical Models" Yandex, Moscow, July 2008.

Invited talk "How I Entered Constraints (and Met Ugo at the Doorway): Some of the Early Milestones" Pisa, June 12 2008. Talk invited in honors of Ugo Montanari's

Invited talk "SampleSearch: Importance Sampling in presence of Determinism", IBM, Haifa, August, 2009,

Invited lecture "Recent Advances in Combinatorial Optimization Tasks over Graphical Models", Hebrew University, December 31st, 2009.

Invited lecture "Recent Advances in Combinatorial Optimization Tasks over Graphical Models", National Institute of Informatics (NII), Tokyo, March 2010.

Tutorial with R. Marinescu, and R. Mateescu "Combinatorial Optimization in Graphical Models" ECAI, Lisbon, August, 2010.

### **Professional Association Memberships**

- American Association of Computing Machinery (ACM)
- American Association of Artificial Intelligence (AAAI)
- Constraint Programming (CP)