CMPT-827 - Intelligent Systems
School of Computing Science
Simon Fraser University

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Reading List

Below please find a selection of technical papers relevant to constraint programming and resource scheduling. The list is somewhat focused on the topics for the course but incomplete at best. Some of the papers are available online in PDF format on the class web page under the Technical Papers Library link. The others are available from the instructor. Note that there are many other articles also on the website which are relevant to the topics in this course. Please take a good look!

Constraint Satisfaction Problems (CSPs)

- R. Bartak, Constraint Programming: In Pursuit of the Holy Grail, Charles University, Faculty of Mathematics and Physics, Department of Theoretical Computer Science, Czech Republic (file: CPintro.WDS99.pdf).

- S. Prestwich () *An Informal Tutorial on Search Techniques in Constraint Programming*, Univeristy College Cork, Ireland (file: an-informal-tutorial.pdf)

- R. Dechter & F. Rossi () Constraint Satisfaction, in Encyclopedia of Cognitive Science, (file: Dechter&Rossi.r85.pdf)

- A. K. Mackworth (1987) Constraint Satisfaction, in Encyclopaedia of Artificial Intelligence, John Wiley and Sons, pp.205-211.

- Constraint Programming, The Constraint Programming Working Group, ACM-MIT SDCR Workshop, ACM Computing Surveys, Dec. 1996 (file: CP.acm-survey.pdf).

- J. Cohen (1990) Constraint Logic Programming Languages, *CACM 33(7)*, pp.52-668 (file: CLP.pdf).

- M. Wallace, Constraint Programming, IC-Parc, Imperial College, 1995 (file: wallace98constraint.pdf).

- M. Wallace, Practical Applications of Constraint Programming, IC-Parc, Imperial College, 1995 (file: practical_app_of_const.pdf).

Constructive Search Methods

- P. Prosser (1993) Hybrid Algorithms for the Constraint Satisfaction Problem, Computational Intelligence 9(3), pp.269-299.

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- V. Kumar, Algorithms for Constraint Satisfaction Problems - A Survey, AI Magazine, Spring 1992. (file: kumar92algorithms.pdf).

- S. Prestwich () *An Informal Tutorial on Search Techniques in Constraint Programming* (file: an-informal-tutorial.pdf).

- Rina Dechter and Daniel Frost, Backtracking algorithms for constraint satisfaction problems, Department of Information and Computer Science,University of California, Irvine, 1999 (file: Dechter_CSP_Rev.pdf).

Advanced Backtracking Methods

- M.L. Ginsberg (1993) Dynamic Backtracking, Journ. of A.I. Research 1, pp.25-46 (file: ginsberg93dynamic.pdf)

- Ginsberg & McAllester (1994) GSAT and Dynamic Backtracking (file: ginsberg94gsat.pdf)

- A. B. Baker (1994) The Hazards of Fancy Backtracking, proc. AAAI 94, pp.288-293.

- R. Dechter & D. Frost (1999) Backtracking Algorithms for Constraint Satisfaction Problems, Dept. of Information and Computer Science, Univ. of California - Irvine (file: Dechter_CSP_Rev.pdf).

Local Search Methods

- S. Minton et.al. (1992) Minimizing conflicts: a heuristic repair method for constraint satisfaction and scheduling problems, AI Journal 58, pp.161-205 (file: aij-mc.pdf)

- M. Zweben, B. Daun, E. Davis & M. Deale (1994) Scheduling and Rescheduling with Iterative Repair, in (Zweben&Fox) Intelligent Scheduling, Morgan-Kaufman, pp.241-255

- B. Selman, H. Levesque & D. Mitchell (1992) A New Method for Solving Hard Satisfiability Problems, proc. 10th Nat. Conf. on A.I., pp.440-446 (file: selman92new.pdf).

- K.A. Dowsland (1993) Simulated Annealing, in C.R. Reeves (ed.) Modern Heuristic Techniques for Combinatorial Problems, John Wiley & Sons.

- F. Glover (1994) Tabu Search Fundamentals and Uses, manuscript, University of Colorado.

- F. Glover (1993) Tabu Search, in C.R. Reeves (ed.) Modern Heuristic Techniques for Combinatorial Problems, Blackwell Scientific Pubs, pp.70-150.

Hybrid Search Methods

- W.S. Havens & B.N. Dilkina (2004) A Hybrid Schema for Systematic Local Search, *proc. Canadian Artificial Intelligence Conf. (AI'04)*, London ON, May 2004 (file: havens&dilkina.ai_syslocal.final.p

- W.D. Harvey & M. Ginsberg () Limited Discrepancy Search (file: LDS.pdf)

- K.Jackson, D.Gaur & W.S. Havens, A Rexamination of Limited Discrepancy Search, Intelligent Systems Laboratory, Computing Science, Simon Fraser University (file: re.LDS.fm.pdf)

- N. Jussein & O. lHomme (2002) Local Search with Constraint Propagation and Conflict-based Heuristics, *Artificial Intelligence 139*, pp.21-45 (file: jussien02local.pdf)

Resource Scheduling

- C. Beck & M. Fox (1998) A Generic Framework for Constraint-Directed Search and Scheduling, AI Magazine, Winter 1998, pp.101-130 (file: beckfox-aimag98v19n4.pdf).

- P. Prosser () Scheduling as a Constraint Satisfaction Problem: Theory and Practice, in Scheduling of Production Processes.

- C.W. Choi (2000) *An Overview of Job Shop Scheduling Problem by Local Search Techniques*, National University of Singapore (file: an-overview-of-solving.pdf)

- R. Bartak (2003) *Constraint-Based Scheduling: An Introduction for Newcomers*, Charles University in Prague, Institute for Theoretical Computer Science (file: IMS2003-1.pdf)

- E. Nowicki & C. Smutnicki (1996) A Fast Taboo Algorithm for the Job Shop Problem, *Management Science 42(6)*, (file: Nowicki-Smutnicki.pdf)

- P. Van Laarhoven *et al* (1992) Job Shop Scheduling by Simulated Annealing, *Operations Research 40(1)*, (file: Sim Anneal - VanLarhoven.pdf)

- R. Vaessens *et al* (1994) *Job Shop Scheduling by Local Search*, Eindhoven University of Technology, Eindhoven, the Netherlands (file: vaessens94job.pdf)

Sports Scheduling

- M. Henz (1999) Constraint-Based Round Robin Tournament Planning, School of Computing, National Univ. of Singapore. (file: Heinz.robin.pdf).

- A. Schaerf (1999) Scheduling Sport Tournaments using CLP, Constraints 4, pp.43-65.

- Nemhauser & Trick (1997) Scheduling a Major College Basketball Conference, Operations Research, (file: Trick.acc.pdf)

- J-P Hamiez & J-K Hao () Solving the Sports League Scheduling Problem with Tabu Search (file: ECAI00WS.pdf)