

## IRIDIA BiB<sub>T</sub><sub>E</sub>X Repository (April 25, 2020)

- [1] E. H. L. Aarts and J. K. Lenstra, editors. *Local Search in Combinatorial Optimization*. John Wiley & Sons, Chichester, UK, 1997.
- [2] E. H. L. Aarts, J. H. M. Korst, and W. Michiels. **Simulated Annealing**. In *Search Methodologies*, pages 187–210. Springer, 2005.
- [3] H. A. Abbass. **The self-adaptive Pareto differential evolution algorithm**. In *Proceedings of the 2002 Congress on Evolutionary Computation (CEC'02)*, pages 831–836, Piscataway, NJ, 2002. IEEE Press.
- [4] H. A. Abbass, R. Sarker, and C. Newton. **PDE: a Pareto-frontier differential evolution approach for multi-objective optimization problems**. In *Proceedings of the 2001 Congress on Evolutionary Computation (CEC'01)*, pages 971–978, Piscataway, NJ, 2001. IEEE Press.
- [5] A. Abraham and M. Paprzycki, editors. *Proceedings of the 5th International Conference on Intelligent Systems Design and Applications*, 2005.
- [6] A. Abraham, L. Jain, and R. Goldberg, editors. *Evolutionary Multiobjective Optimization*. Advanced Information and Knowledge Processing. Springer, London, UK, Jan. 2005.
- [7] D. Abramson. **Constructing School Timetables Using Simulated Annealing: Sequential and Parallel Algorithms**. *Management Science*, 37(1):98–113, 1991.
- [8] D. Abramson, M. K. Amoorthy, and H. Dang. **Simulated annealing cooling schedules for the school timetabling problem**. *Asia-Pacific Journal of Operational Research*, 16(1):1–22, 1999.
- [9] A. Acan. **An external memory implementation in ant colony optimization**. In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 4th International Workshop, ANTS 2004*, volume 3172 of *Lecture Notes in Computer Science*, pages 73–84. Springer, Heidelberg, Germany, 2004.  
*Keywords:* memory-based ACO.
- [10] A. Acan. **An external partial permutations memory for ant colony optimization**. In G. R. Raidl and J. Gottlieb, editors, *Proceedings of EvoCOP 2005 – 5th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 3448 of *Lecture Notes in Computer Science*, pages 1–11. Springer, Heidelberg, Germany, 2005.  
*Keywords:* memory-based ACO.
- [11] ACC2019. *2019 American Control Conference, ACC 2019, Philadelphia, PA, USA, July 10-12, 2019*, 2019. IEEE.
- [12] T. Achterberg. **SCIP: Solving constraint integer programs**. *Mathematical Programming Computation*, 1(1):1–41, July 2009.  
*Annotation:* [http://mpc.zib.de/archive/2009/1/Achterberg2009\\_Article\\_SCIPSolvingConstraintIntegerPr.pdf](http://mpc.zib.de/archive/2009/1/Achterberg2009_Article_SCIPSolvingConstraintIntegerPr.pdf).
- [13] H.-G. Acosta-Mesa, F. Rechy-Ramírez, E. Mezura-Montes, N. Cruz-Ramírez, and R. H. Jiménez. **Application of time series discretization using evolutionary programming for classification of precancerous cervical lesions**. *Journal of Biomedical Informatics*, 49:73–83, 2014. doi:10.1016/j.jbi.2014.03.004.  
*Keywords:* irace.

- [14] B. Addis, M. Locatelli, and F. Schoen. **Disk Packing in a Square: A New Global Optimization Approach.** *INFORMS Journal on Computing*, 20(4):516–524, 2008. doi:[10.1287/ijoc.1080.0263](https://doi.org/10.1287/ijoc.1080.0263).
- [15] B. Adenso-Díaz. **Restricted Neighborhood in the Tabu Search for the Flowshop Problem.** *European Journal of Operational Research*, 62(1):27–37, 1992.
- [16] B. Adenso-Díaz and M. Laguna. **Fine-Tuning of Algorithms Using Fractional Experimental Design and Local Search.** *Operations Research*, 54(1):99–114, 2006.
- [17] H. E. Aguirre. **Advances on Many-objective Evolutionary Optimization.** In C. Blum and E. Alba, editors, *GECCO (Companion)*, pages 641–666, New York, NY, 2013. ACM Press.  
*Keywords:* many-objective evolutionary optimization.
- [18] H. E. Aguirre and K. Takadama, editors. *Genetic and Evolutionary Computation Conference, GECCO 2018, Kyoto, Japan, July 15-19, 2018*. ACM Press, New York, NY, 2018. doi:[10.1145/3205455](https://doi.org/10.1145/3205455).
- [19] H. E. Aguirre and K. Tanaka. **Working principles, behavior, and performance of MOEAs on MNK-landscapes.** *European Journal of Operational Research*, 181(3):1670–1690, 2007. doi:[10.1016/j.ejor.2006.08.004](https://doi.org/10.1016/j.ejor.2006.08.004).
- [20] H. E. Aguirre and K. Tanaka. **Many-Objective Optimization by Space Partitioning and Adaptive  $\epsilon$ -Ranking on MNK-Landscapes.** In M. Ehrgott, C. M. Fonseca, X. Gandibleux, J.-K. Hao, and M. Sevaux, editors, *Evolutionary Multi-criterion Optimization, EMO 2009*, volume 5467 of *Lecture Notes in Computer Science*, pages 407–422. Springer, Heidelberg, Germany, 2009.
- [21] S. Ahmadi and I. H. Osman. **Density Based Problem Space Search for the Capacitated Clustering  $p$ -Median Problem.** *Annals of Operations Research*, 131:21–43, 2004.
- [22] A. Aho, J. Hopcroft, and J. Ullman. *Data structures and algorithms*. Addison-Wesley, Reading, MA, 1983.
- [23] R. K. Ahuja, T. Magnanti, and J. B. Orlin. *Network Flows: Theory, Algorithms and Applications*. Prentice-Hall, 1993.
- [24] R. K. Ahuja, O. Ergun, and A. P. Punnen. **A Survey of Very Large-scale Neighborhood Search Techniques.** *Discrete Applied Mathematics*, 123(1–3):75–102, 2002.
- [25] U. Aickelin, E. K. Burke, and J. Li. **Improved Squeaky Wheel Optimisation for Driver Scheduling.** In T. P. Runarsson, H.-G. Beyer, E. K. Burke, J.-J. Merelo, D. Whitley, and X. Yao, editors, *Proceedings of PPSN-IX, Ninth International Conference on Parallel Problem Solving from Nature*, volume 4193 of *Lecture Notes in Computer Science*, pages 182–191. Springer, Heidelberg, Germany, 2006.
- [26] S. Aine, R. Kumar, and P. P. Chakrabarti. **Adaptive parameter control of evolutionary algorithms to improve quality-time trade-off.** *Applied Soft Computing*, 9(2):527–540, 2009. doi:[10.1016/j.asoc.2008.07.001](https://doi.org/10.1016/j.asoc.2008.07.001).  
*Keywords:* anytime.

- [27] H. Aissi and B. Roy. **Robustness in Multi-criteria Decision Aiding**. In M. Ehrgott, J. R. Figueira, and S. Greco, editors, *Trends in Multiple Criteria Decision Analysis*, volume 142 of *International Series in Operations Research & Management Science*, chapter 4, pages 87–121. Springer, US, 2010.
- [28] S. M. Aktürk, A. Atamtürk, and S. Gürel. **A Strong Conic Quadratic Reformulation for Machine-Job Assignment with Controllable Processing Times**. Research Report BCOL.07.01, University of California-Berkeley, 2007.
- [29] I. Alaya, C. Solnon, and K. Ghédira. **Ant algorithm for the multi-dimensional knapsack problem**. In B. Filipič and J. Šilc, editors, *International Conference on Bioinspired Optimization Methods and their Applications (BIOMA 2004)*, pages 63–72, 2004. URL <https://books.google.be/books?id=OZLsAAAACAAJ>.
- [30] I. Alaya, C. Solnon, and K. Ghédira. **Ant Colony Optimization for Multi-Objective Optimization Problems**. In *19th IEEE International Conference on Tools with Artificial Intelligence (ICTAI 2007)*, volume 1, pages 450–457. IEEE Computer Society Press, Los Alamitos, CA, 2007.
- [31] E. Alba and F. Chicano. **ACO<sub>h</sub>g: dealing with huge graphs**. In D. Thierens et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2007*, pages 10–17. ACM Press, New York, NY, 2007. doi:10.1145/1276958.1276961.
- [32] E. Alba, F. Chicano, and G. J. Luque, editors. *Smart Cities: First International Conference, Smart-CT 2016, Málaga, Spain, June 15-17, 2016, Proceedings*. Lecture Notes in Computer Science. Springer, Cham, Switzerland, 2016.
- [33] A. Albrecht and K. Steinhöfel, editors. *Second International Symposium, SAGA 2003, Hatfield, UK, September 22-23, 2003, Proceedings*, volume 2827 of *Lecture Notes in Computer Science*, 2003. Springer Verlag. doi:10.1007/b13596.
- [34] A. A. Albrecht, P. C. R. Lane, and K. Steinhöfel. **Analysis of Local Search Landscapes for k-SAT Instances**. *Mathematics in Computer Science*, 3(4):465–488, 2010. doi:10.1007/s11786-010-0040-7.
- [35] A. Aleti and I. Moser. **A systematic literature review of adaptive parameter control methods for evolutionary algorithms**. *ACM Computing Surveys*, 49(3, Article 56):35, Oct. 2016. doi:10.1145/2996355.
- [36] V. Alexandrov, M. Lees, V. Krzhizhanovskaya, J. Dongarra, and P. M. Sloot, editors. *2013 International Conference on Computational Science*, volume 18 of *Procedia Computer Science*, 2013. Elsevier.
- [37] M. Alissa, K. Sim, and E. Hart. **Algorithm Selection Using Deep Learning without Feature Extraction**. In M. López-Ibáñez, A. Auger, and T. Stützle, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2019*, pages 198–206, New York, NY, 2019. ACM Press. ISBN 978-1-4503-6111-8.
- [38] A. Allahverdi and H. Aydilek. **Algorithms for no-wait flowshops with total completion time subject to makespan**. *International Journal of Advanced Manufacturing Technology*, pages 1–15, 2013.
- [39] R. Allmendinger. *Tuning evolutionary search for closed-loop optimization*. PhD thesis, The University of Manchester, UK, 2012.

- [40] R. Allmendinger and J. D. Knowles. **Evolutionary Search in Lethal Environments.** In *International Conference on Evolutionary Computation Theory and Applications (ECTA)*, pages 63–72. SciTePress, 2011. doi:10.5220/0003673000630072.
- [41] C. Almeder. **A hybrid optimization approach for multi-level capacitated lot-sizing problems.** *European Journal of Operational Research*, 200(2):599–606, 2010. doi:10.1016/j.ejor.2009.01.019.  
*Keywords:* Ant colony optimization, Manufacturing, Material requirements planning, Mixed-integer programming.
- [42] F. Almeida et al., editors. *Proceedings of HM 2006 – 3rd International Workshop on Hybrid Metaheuristics*, volume 4030 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2006.
- [43] A. Alsheddy and E. Tsang. **Guided Pareto local search and its application to the 0/1 multi-objective knapsack problems.** In M. Caserta and S. Voß, editors, *Proceedings of MIC 2009, the 8th Metaheuristics International Conference*, Hamburg, Germany, 2010. University of Hamburg.
- [44] S. Alupoaei and S. Katkooi. **Ant Colony System Application to Marcocell Overlap Removal.** *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, 12(10):1118–1122, 2004.
- [45] S. Amani, M. Alizadeh, and C. Thrampoulidis. **Linear Stochastic Bandits Under Safety Constraints.** In H. M. Wallach, H. Larochelle, A. Beygelzimer, F. d’Alché-Buc, E. B. Fox, and R. Garnett, editors, *Advances in Neural Information Processing Systems (NIPS 32)*, pages 9256–9266, 2019.
- [46] C. Amir, A. Badr, and I. Farag. **A Fuzzy Logic Controller for Ant Algorithms.** *Computing and Information Systems*, 11(2):26–34, 2007.
- [47] J. H. Andersen and R. S. Powell. **The Use of Continuous Decision Variables in an Optimising Fixed Speed Pump Scheduling Algorithm.** In R. S. Powell and K. S. Hindi, editors, *Computing and Control for the Water Industry*, pages 119–128. Research Studies Press Ltd., 1999.
- [48] K. Andersen, R. V. V. Vidal, and V. B. Iversen. **Design of a Teleprocessing Communication Network Using Simulated Annealing.** In R. V. V. Vidal, editor, *Applied Simulated Annealing*, pages 201–215. Springer, 1993.
- [49] K. A. Andersen, K. Jörnsten, and M. Lind. **On bicriterion minimal spanning trees: An approximation.** *Computers & Operations Research*, 23(12):1171–1182, 1996.
- [50] C. Andrieu, N. de Freitas, A. Doucet, and M. I. Jordan. **An Introduction to MCMC for Machine Learning.** *Machine Learning*, 50(1-2):5–43, 2003.
- [51] Y. P. Aneja and K. P. K. Nair. **Bicriteria Transportation Problem.** *Management Science*, 25(1):73–78, 1979.
- [52] E. Angel, E. Bampis, and L. Gourvés. **Approximating the Pareto curve with local search for the bicriteria TSP(1,2) problem.** *Theoretical Computer Science*, 310(1-3): 135–146, 2004. doi:10.1016/S0304-3975(03)00376-1.  
*Keywords:* Archiving, Local search, Multicriteria TSP, Approximation algorithms.

- [53] P. Angelov et al., editors. *Evolving and Autonomous Learning Systems (EALS)*, 2014 *IEEE Symposium on*, 2014. IEEE.
- [54] D. Anghinolfi, A. Boccalatte, M. Paolucci, and C. Vecchiola. **Performance Evaluation of an Adaptive Ant Colony Optimization Applied to Single Machine Scheduling**. In X. Li et al., editors, *Simulated Evolution and Learning, 7th International Conference, SEAL 2008*, volume 5361 of *Lecture Notes in Computer Science*, pages 411–420. Springer, Heidelberg, Germany, 2008.
- [55] D. Angus. **Population-Based Ant Colony Optimisation for Multi-objective Function Optimisation**. In M. Randall, H. A. Abbass, and J. Wiles, editors, *Progress in Artificial Life (ACAL)*, volume 4828 of *Lecture Notes in Computer Science*, pages 232–244. Springer, Heidelberg, Germany, 2007. doi:10.1007/978-3-540-76931-6\_21.
- [56] D. Angus and C. Woodward. **Multiple Objective Ant Colony Optimisation**. *Swarm Intelligence*, 3(1):69–85, 2009. doi:10.1007/s11721-008-0022-4.
- [57] J. Ansel, S. Kamil, K. Veeramachaneni, J. Ragan-Kelley, J. Bosboom, U. M. O’Reilly, and S. Amarasinghe. **OpenTuner: An extensible framework for program autotuning**. In *Proceedings of the 23rd International Conference on Parallel Architectures and Compilation*, pages 303–315. ACM New York, NY, USA, 2014. doi:10.1145/2628071.2628092.
- [58] C. Ansótegui, M. Sellmann, and K. Tierney. **A Gender-Based Genetic Algorithm for the Automatic Configuration of Algorithms**. In I. P. Gent, editor, *Principles and Practice of Constraint Programming, CP 2009*, volume 5732 of *Lecture Notes in Computer Science*, pages 142–157. Springer, Heidelberg, Germany, 2009. doi:10.1007/978-3-642-04244-7\_14.
- [59] C. Ansótegui, Y. Malitsky, and M. Sellmann. **MaxSAT by Improved Instance-Specific Algorithm Configuration**. In D. Stracuzzi et al., editors, *AAAI*, pages 2594–2600. AAAI Press, 2014.
- [60] C. Ansótegui, Y. Malitsky, H. Samulowitz, M. Sellmann, and K. Tierney. **Model-Based Genetic Algorithms for Algorithm Configuration**. In Q. Yang and M. Wooldridge, editors, *Proceedings of the Twenty-Fourth International Joint Conference on Artificial Intelligence (IJCAI-15)*, pages 733–739. IJCAI/AAAI Press, Menlo Park, CA, 2015.
- [61] C. Ansótegui, M. Sellmann, and K. Tierney. **GGA: Gender-based Genetic Algorithm Configurator**. [https://bitbucket.org/gga\\_ac/](https://bitbucket.org/gga_ac/), 2017. Version visited last on July 2017.
- [62] Apache Software Foundation. **Hadoop**, 2008. URL <https://hadoop.apache.org>.
- [63] Apache Software Foundation. **Spark**, 2012. URL <https://spark.apache.org>.
- [64] J. S. Appleby, D. V. Blake, and E. A. Newman. **Techniques for producing school timetables on a computer and their application to other scheduling problems**. *The Computer Journal*, 3(4):237–245, 1961. doi:10.1093/comjnl/3.4.237.
- [65] D. Applegate and W. J. Cook. **A Computational Study of the Job-Shop Scheduling Problem**. *ORSA Journal on Computing*, 3(2):149–156, 1991.

- [66] D. Applegate, R. E. Bixby, V. Chvátal, and W. J. Cook. **Finding Cuts in the TSP**. Technical Report 95-05, DIMACS Center, Rutgers University, Piscataway, NJ, USA, Mar. 1995.
- [67] D. Applegate, R. E. Bixby, V. Chvátal, and W. J. Cook. **On the Solution of Traveling Salesman Problems**. *Documenta Mathematica*, Extra Volume ICM III:645–656, 1998.
- [68] D. Applegate, R. E. Bixby, V. Chvátal, and W. J. Cook. **Finding Tours in the TSP**. Technical Report 99885, Forschungsinstitut für Diskrete Mathematik, University of Bonn, Germany, 1999.
- [69] D. Applegate, R. E. Bixby, V. Chvátal, and W. J. Cook. **Implementing the Dantzig-Fulkerson-Johnson Algorithm for Large Traveling Salesman Problems**. *Mathematical Programming Series B*, 97(1–2):91–153, 2003.
- [70] D. Applegate, W. J. Cook, and A. Rohe. **Chained Lin-Kernighan for Large Traveling Salesman Problems**. *INFORMS Journal on Computing*, 15(1):82–92, 2003. doi:10.1287/ijoc.15.1.82.15157.
- [71] D. Applegate, R. E. Bixby, V. Chvátal, and W. J. Cook. *The Traveling Salesman Problem: A Computational Study*. Princeton University Press, Princeton, NJ, 2006.
- [72] D. Applegate, R. E. Bixby, V. Chvátal, W. J. Cook, D. Espinoza, M. Goycoolea, and K. Helsgaun. **Certification of an Optimal TSP Tour Through 85,900 Cities**. *Operations Research Letters*, 37(1):11–15, 2009.
- [73] D. Applegate, R. E. Bixby, V. Chvátal, and W. J. Cook. **Concorde TSP Solver**. <http://www.math.uwaterloo.ca/tsp/concorde.html>, 2014. Version visited last on 15 April 2014.
- [74] J. April, F. Glover, J. P. Kelly, and M. Laguna. **Simulation-based optimization: Practical introduction to simulation optimization**. In S. E. Chick, P. J. Sanchez, D. M. Ferrin, and D. J. Morrice, editors, *Proceedings of the 35th Winter Simulation Conference: Driving Innovation*, volume 1, pages 71–78, New York, NY, Dec. 2003. ACM Press. doi:10.1109/WSC.2003.1261410.
- [75] H. R. Arabnia, editor. *Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA’98)*. CSREA Press, 1998.
- [76] H. R. Arabnia and R. Joshua, editors. *Proceedings of the 2005 International Conference on Artificial Intelligence, ICAI 2005*. CSREA Press, 2005. ISBN 1-932415-66-1.
- [77] F. Arnold and K. Sörensen. **Knowledge-guided local search for the vehicle routing problem**. *Computers & Operations Research*, 105:32–46, 2019. doi:10.1016/j.cor.2019.01.002.
- [78] F. Arnold and K. Sörensen. **What makes a VRP solution good? The generation of problem-specific knowledge for heuristics**. *Computers & Operations Research*, 106:280–288, 2019. doi:10.1016/j.cor.2018.02.007.
- [79] F. Arnold, I. Santana, K. Sörensen, and T. Vidal. **PILS: Exploring high-order neighborhoods by pattern mining and injection**. *Arxiv preprint arXiv:1912.11462*, 2019. URL <http://arxiv.org/abs/1912.11462>.



- [80] J. Arroyo and J.-T. Leung. **An Effective Iterated Greedy Algorithm for Scheduling Unrelated Parallel Batch Machines with Non-identical Capacities and Unequal Ready Times.** *Computers and Industrial Engineering*, 105:84–100, 2017.
- [81] J. E. Arroyo and V. A. Armentano. **A partial enumeration heuristic for multi-objective flowshop scheduling problems.** *Journal of the Operational Research Society*, 55(9):1000–1007, 2004.
- [82] J. E. Arroyo and V. A. Armentano. **Genetic local search for multi-objective flowshop scheduling problems.** *European Journal of Operational Research*, 167(3): 717–738, 2005.  
*Keywords:* Multicriteria Scheduling.
- [83] Y. Asahiro, K. Iwama, and E. Miyano. **Random Generation of Test Instances with Controlled Attributes.** In D. S. Johnson and M. A. Trick, editors, *Cliques, Coloring, and Satisfiability: Second DIMACS Implementation Challenge*, volume 26 of *DIMACS Series on Discrete Mathematics and Theoretical Computer Science*, pages 377–393. American Mathematical Society, Providence, RI, 1996.
- [84] N. Ascheuer. *Hamiltonian Path Problems in the On-line Optimization of Flexible Manufacturing Systems.* PhD thesis, Technische Universität Berlin, Berlin, Germany, 1995.
- [85] N. Ascheuer, M. Fischetti, and M. Grötschel. **Solving asymmetric travelling salesman problem with time windows by branch-and-cut.** *Mathematical Programming*, 90:475–506, 2001.
- [86] A. Atamtürk. **On the facets of the mixed-integer knapsack polyhedron.** *Mathematical Programming*, 98(1):145–175, 2003. doi:10.1007/s10107-003-0400-z.
- [87] R. Atkinson, J. E. van Zyl, G. A. Walters, and D. A. Savic. **Genetic algorithm optimisation of level-controlled pumping station operation.** In *Water network modelling for optimal design and management*, pages 79–90. Centre for Water Systems, Exeter, UK, 2000.
- [88] C. Audet and D. Orban. **Finding Optimal Algorithmic Parameters Using Derivative-Free Optimization.** *SIAM Journal on Optimization*, 17(3):642–664, 2006.
- [89] C. Audet, C.-K. Dang, and D. Orban. **Algorithmic Parameter Optimization of the DFO Method with the OPAL Framework.** In K. Naono, K. Teranishi, J. Cavazos, and R. Suda, editors, *Software Automatic Tuning: From Concepts to State-of-the-Art Results*, pages 255–274. Springer, 2010.
- [90] C. Audet, C.-K. Dang, and D. Orban. **Optimization of Algorithms with OPAL.** *Mathematical Programming Computation*, 6(3):233–254, 2014.
- [91] P. Audze and V. Eglājs. **New approach to the design of multifactor experiments.** *Problems of Dynamics and Strengths*, 35:104–107, 1977. (in Russian).
- [92] P. Auer, N. Cesa-Bianchi, and P. Fischer. **Finite-time analysis of the multiarmed bandit problem.** *Machine Learning*, 47(2-3):235–256, 2002.

- [93] A. Auger and N. Hansen. **A restart CMA evolution strategy with increasing population size.** In *Proceedings of the 2005 Congress on Evolutionary Computation (CEC 2005)*, pages 1769–1776. IEEE Press, Piscataway, NJ, Sept. 2005. doi:10.1109/CEC.2005.1554902.  
*Keywords:* IPOP-CMA-ES.
- [94] A. Auger and N. Hansen. **Performance evaluation of an advanced local search evolutionary algorithm.** In *Proceedings of the 2005 Congress on Evolutionary Computation (CEC 2005)*, pages 1777–1784. IEEE Press, Piscataway, NJ, Sept. 2005.  
*Keywords:* LR-CMAES.
- [95] A. Auger, J. Bader, D. Brockhoff, and E. Zitzler. **Articulating User Preferences in Many-Objective Problems by Sampling the Weighted Hypervolume.** In F. Rothlauf, editor, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2009*, pages 555–562. ACM Press, New York, NY, 2009.
- [96] A. Auger, J. Bader, D. Brockhoff, and E. Zitzler. **Investigating and Exploiting the Bias of the Weighted Hypervolume to Articulate User Preferences.** In F. Rothlauf, editor, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2009*, pages 563–570. ACM Press, New York, NY, 2009.
- [97] A. Auger, J. Bader, D. Brockhoff, and E. Zitzler. **Theory of the hypervolume indicator: optimal  $\mu$ -distributions and the choice of the reference point.** In F. Rothlauf, editor, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2009*, pages 87–102. ACM Press, New York, NY, 2009.
- [98] A. Auger, J. Bader, D. Brockhoff, and E. Zitzler. **Hypervolume-based multiobjective optimization: Theoretical foundations and practical implications.** *Theoretical Computer Science*, 425:75–103, 2012. doi:10.1016/j.tcs.2011.03.012.
- [99] A. Auger, D. Brockhoff, M. López-Ibáñez, K. Miettinen, B. Naujoks, and G. Rudolph. **Which questions should be asked to find the most appropriate method for decision making and problem solving? (Working Group “Algorithm Design Methods”).** In S. Greco, J. D. Knowles, K. Miettinen, and E. Zitzler, editors, *Learning in Multiobjective Optimization (Dagstuhl Seminar 12041)*, volume 2(1) of *Dagstuhl Reports*, pages 92–93. Schloss Dagstuhl–Leibniz-Zentrum für Informatik, Germany, 2012. doi:10.4230/DagRep.2.1.50.
- [100] A. Auger, D. Brockhoff, N. Hansen, D. Tutar, T. Tušar, and T. Wagner. **GECCO Workshop on Real-Parameter Black-Box Optimization Benchmarking (BBOB 2016): Focus on multi-objective problems.** <https://numbbo.github.io/workshops/BBOB-2016/>, 2016.
- [101] A. Auger, C. M. Fonseca, N. Lourenço, P. Machado, L. Paquete, and D. Whitley, editors. *Parallel Problem Solving from Nature - PPSN XV 15th International Conference, Coimbra, Portugal, September 8-12, 2018, Proceedings*, volume 11101 of *Lecture Notes in Computer Science*. Springer, Cham, 2018.
- [102] A. Auger, C. M. Fonseca, N. Lourenço, P. Machado, L. Paquete, and D. Whitley, editors. *Parallel Problem Solving from Nature - PPSN XV 15th International Conference, Coimbra, Portugal, September 8-12, 2018, Proceedings*, volume 11102 of *Lecture Notes in Computer Science*. Springer, Cham, 2018.



- [103] M. Avci and S. Topaloglu. **A Multi-start Iterated Local Search Algorithm for the Generalized Quadratic Multiple Knapsack Problem.** *Computers & Operations Research*, 83:54–65, 2017.
- [104] D. Aydın. **Composite artificial bee colony algorithms: From component-based analysis to high-performing algorithms.** *Applied Soft Computing*, 32:266–285, 2015. [doi:10.1016/j.asoc.2015.03.051](https://doi.org/10.1016/j.asoc.2015.03.051).  
*Keywords:* irace.
- [105] D. Aydın, G. Yavuz, S. Özyön, C. Yasar, and T. Stützle. **Artificial Bee Colony Framework to Non-convex Economic Dispatch Problem with Valve Point Effects: A Case Study.** In P. A. N. Bosman, editor, *GECCO'17 Companion*, pages 1311–1318, New York, NY, 2017. ACM Press.
- [106] D. Aydın, G. Yavuz, and T. Stützle. **ABC-X: A Generalized, Automatically Configurable Artificial Bee Colony Framework.** *Swarm Intelligence*, 11(1):1–38, 2017.
- [107] M. Aziz and M.-H. Tayarani- N. **An adaptive memetic Particle Swarm Optimization algorithm for finding large-scale Latin hypercube designs.** *Engineering Applications of Artificial Intelligence*, 36:222–237, 2014. [doi:10.1016/j.engappai.2014.07.021](https://doi.org/10.1016/j.engappai.2014.07.021).  
*Keywords:* F-race.
- [108] D. Babić and A. J. Hu. **Structural Abstraction of Software Verification Conditions.** In *Computer Aided Verification: 19th International Conference, CAV 2007*, pages 366–378, 2007.  
*Annotation:* Spear-svw instances, [http://www.cs.ubc.ca/labs/beta/Projects/ParamILS/benchmark\\_instances/SpearSWV/SWV-scrambled-first302.tar.gz](http://www.cs.ubc.ca/labs/beta/Projects/ParamILS/benchmark_instances/SpearSWV/SWV-scrambled-first302.tar.gz), [http://www.cs.ubc.ca/labs/beta/Projects/ParamILS/benchmark\\_instances/SpearSWV/SWV-scrambled-last302.tar.gz](http://www.cs.ubc.ca/labs/beta/Projects/ParamILS/benchmark_instances/SpearSWV/SWV-scrambled-last302.tar.gz).
- [109] D. Babić and F. Hutter. **Spear Theorem Prover.** In *SAT'08: Proceedings of the SAT 2008 Race*, 2008.  
*Annotation:* Unreviewed paper.
- [110] F. Bacchus and T. Walsh, editors. *International Conference on Theory and Applications of Satisfiability Testing*, volume 3569, 2005.
- [111] F. Bach and D. Blei, editors. *Proceedings of the 32nd International Conference on Machine Learning, ICML 2015, Lille, France, 7-9 July 2015*, volume 37, 2015.
- [112] A. Bachem, B. Steckemetz, and M. Wottawa. **An efficient parallel cluster-heuristic for large Traveling Salesman Problems.** Technical Report 94-150, University of Koln, Germany, 1994.  
*Keywords:* Genetic Edge Recombination (ERX).
- [113] T. Bäck, editor. *Proceedings of the 7th International Conference on Genetic Algorithms, East Lansing, MI, USA, July 19-23, 1997*. Morgan Kaufmann Publishers, San Francisco, CA, 1997.
- [114] T. Bäck, T. Fukuda, and Z. Michalewicz, editors. *Proceedings of the 1996 IEEE International Conference on Evolutionary Computation (ICEC'96)*. IEEE Press, Piscataway, NJ, 1996.

- [115] T. Bäck, D. B. Fogel, and Z. Michalewicz. *Handbook of evolutionary computation*. IOP Publishing, 1997.
- [116] T. Bäck, Z. Michalewicz, and X. Yao, editors. *Proceedings of the 1997 IEEE International Conference on Evolutionary Computation (ICEC'97)*. IEEE Press, Piscataway, NJ, 1997.
- [117] J. Bader and E. Zitzler. **HypE: An Algorithm for Fast Hypervolume-Based Many-Objective Optimization.** *Evolutionary Computation*, 19(1):45–76, 2011. doi:[10.1162/EVC0\\_a\\_00009](https://doi.org/10.1162/EVC0_a_00009).
- [118] H. Baharmand, T. Comes, and M. Laurus. **Bi-objective multi-layer location-allocation model for the immediate aftermath of sudden-onset disasters.** *Transportation Research Part E: Logistics and Transportation Review*, 127: 86–110, 2019. doi:[10.1016/j.tre.2019.05.002](https://doi.org/10.1016/j.tre.2019.05.002).
- [119] E. K. Baker. **An Exact Algorithm for the Time-Constrained Traveling Salesman Problem.** *Operations Research*, 31(5):938–945, 1983. doi:[10.1287/opre.31.5.938](https://doi.org/10.1287/opre.31.5.938).
- [120] P. Balaprakash, M. Birattari, T. Stützle, and M. Dorigo. **Incremental local search in ant colony optimization: Why it fails for the quadratic assignment problem.** In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 5th International Workshop, ANTS 2006*, volume 4150 of *Lecture Notes in Computer Science*, pages 156–166. Springer, Heidelberg, Germany, 2006.
- [121] P. Balaprakash, M. Birattari, and T. Stützle. **Improvement Strategies for the F-Race Algorithm: Sampling Design and Iterative Refinement.** In T. Bartz-Beielstein, M. J. Blesa, C. Blum, B. Naujoks, A. Roli, G. Rudolph, and M. Sampels, editors, *Hybrid Metaheuristics*, volume 4771 of *Lecture Notes in Computer Science*, pages 108–122. Springer, Heidelberg, Germany, 2007.  
*Keywords:* Iterated Race.
- [122] P. Balaprakash, M. Birattari, T. Stützle, and M. Dorigo. **Adaptive Sampling Size and Importance Sampling in Estimation-based Local Search for the Probabilistic Traveling Salesman Problem.** *European Journal of Operational Research*, 199(1): 98–110, 2009.
- [123] P. Balaprakash, M. Birattari, T. Stützle, Z. Yuan, and M. Dorigo. **Estimation-based Ant Colony Optimization Algorithms for the Probabilistic Travelling Salesman Problem.** *Swarm Intelligence*, 3(3):223–242, 2009.
- [124] P. Balaprakash, M. Birattari, T. Stützle, and M. Dorigo. **Estimation-based Metaheuristics for the Probabilistic Travelling Salesman Problem.** *Computers & Operations Research*, 37(11):1939–1951, 2010. doi:[10.1016/j.cor.2009.12.005](https://doi.org/10.1016/j.cor.2009.12.005).
- [125] P. Balaprakash, M. Birattari, T. Stützle, and M. Dorigo. **Estimation-based Metaheuristics for the Single Vehicle Routing Problem with Stochastic Demands and Customers.** *Computational Optimization and Applications*, 61(2): 463–487, 2015. doi:[10.1007/s10589-014-9719-z](https://doi.org/10.1007/s10589-014-9719-z).
- [126] E. Balas and M. C. Carrera. **A Dynamic Subgradient-based Branch and Bound Procedure for Set Covering.** *Operations Research*, 44(6):875–890, 1996.

- [127] E. Balas and A. Ho. **Set Covering Algorithms Using Cutting Planes, Heuristics, and Subgradient Optimization: A Computational Study.** *Mathematical Programming Study*, 12:37–60, 1980.
- [128] E. Balas and C. Martin. **Pivot and Complement—A Heuristic for 0–1 Programming.** *Management Science*, 26(1):86–96, 1980.
- [129] E. Balas and M. W. Padberg. **Set Partitioning: A Survey.** *SIAM Review*, 18:710–760, 1976.
- [130] E. Balas and N. Simonetti. **Linear Time Dynamic-Programming Algorithms for New Classes of Restricted TSPs: A Computational Study.** *INFORMS Journal on Computing*, 13(1):56–75, 2001. doi:[10.1287/ijoc.13.1.56.9748](https://doi.org/10.1287/ijoc.13.1.56.9748).  
Keywords: tsptw.
- [131] E. Balas and A. Vazacopoulos. **Guided Local Search with Shifting Bottleneck for Job Shop Scheduling.** *Management Science*, 44(2):262–275, 1998.
- [132] S. C. Banks. **Tools and techniques for developing policies for complex and uncertain systems.** *Proceedings of the National Academy of Sciences*, 99(suppl 3):7263–7266, 2002. doi:[10.1073/pnas.092081399](https://doi.org/10.1073/pnas.092081399).
- [133] W. Banzhaf, J. M. Daida, A. E. Eiben, M. H. Garzon, V. Honavar, M. J. Jakiela, and R. E. Smith, editors. *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 1999, 13-17 July 1999, Orlando, Florida, USA*. Morgan Kaufmann Publishers, San Francisco, CA, 1999.
- [134] P. Baptiste and L. K. Hguny. **A branch and bound algorithm for the F/no\_idle/ $C_{\max}$ .** In *Proceedings of the international conference on industrial engineering and production management, IEPM'97*, pages 429–438, Lyon, 1997.
- [135] B. Barán and M. Schaerer. **A multiobjective ant colony system for vehicle routing problem with time windows.** In *Proceedings of the Twenty-first IASTED International Conference on Applied Informatics*, pages 97–102, Innsbruck, Austria, 2003.
- [136] C. Barnhart, E. L. Johnson, G. L. Nemhauser, M. W. Savelsbergh, and P. H. Vance. **Branch-and-price: Column generation for solving huge integer programs.** *Operations Research*, 46(3):316–329, 1998.
- [137] R. S. Barr, B. L. Golden, J. P. Kelly, M. G. C. Resende, and W. R. Stewart. **Designing and Reporting on Computational Experiments with Heuristic Methods.** *Journal of Heuristics*, 1(1):9–32, 1995. doi:[10.1007/BF02430363](https://doi.org/10.1007/BF02430363).
- [138] P. L. Bartlett, F. C. N. Pereira, C. J. C. Burges, L. Bottou, and K. Q. Weinberger, editors. *Advances in Neural Information Processing Systems 25: 26th Annual Conference on Neural Information Processing Systems 2012*. Curran Associates, Red Hook, NY, 2012.
- [139] T. Bartz-Beielstein. *Experimental Research in Evolutionary Computation: The New Experimentalism*. Springer, Berlin, Germany, 2006.  
Keywords: SPO.
- [140] T. Bartz-Beielstein. **How to Create Generalizable Results.** In J. Kacprzyk and W. Pedrycz, editors, *Springer Handbook of Computational Intelligence*, pages 1127–1142. Springer, Berlin, Heidelberg, 2015.

- [141] T. Bartz-Beielstein and S. Markon. **Tuning search algorithms for real-world applications: A regression tree based approach.** In *Proceedings of the 2004 Congress on Evolutionary Computation (CEC 2004)*, pages 1111–1118, Piscataway, NJ, Sept. 2004. IEEE Press.
- [142] T. Bartz-Beielstein and M. Preuss. **Considerations of budget allocation for sequential parameter optimization (SPO).** In L. Paquete, M. Chiarandini, and D. Basso, editors, *Empirical Methods for the Analysis of Algorithms, Workshop EMAA 2006, Proceedings*, pages 35–40, Reykjavik, Iceland, 2006.
- [143] T. Bartz-Beielstein, C. Lasarczyk, and M. Preuss. **Sequential Parameter Optimization.** In *Proceedings of the 2005 Congress on Evolutionary Computation (CEC 2005)*, pages 773–780, Piscataway, NJ, Sept. 2005. IEEE Press.
- [144] T. Bartz-Beielstein, M. J. Blesa, C. Blum, B. Naujoks, A. Roli, G. Rudolph, and M. Sampels, editors. *Hybrid Metaheuristics HM 2007, 4th International Workshop*, volume 4771 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2007.
- [145] T. Bartz-Beielstein, M. Chiarandini, L. Paquete, and M. Preuss, editors. *Experimental Methods for the Analysis of Optimization Algorithms*. Springer, Berlin, Germany, 2010.
- [146] T. Bartz-Beielstein, O. Flasch, P. Koch, and W. Konen. **SPOT: A Toolbox for Interactive and Automatic Tuning in the R Environment.** In *Proceedings 20. Workshop Computational Intelligence*, Karlsruhe, 2010. KIT Scientific Publishing.
- [147] T. Bartz-Beielstein, C. Lasarczyk, and M. Preuss. **The Sequential Parameter Optimization Toolbox.** In T. Bartz-Beielstein, M. Chiarandini, L. Paquete, and M. Preuss, editors, *Experimental Methods for the Analysis of Optimization Algorithms*, pages 337–360. Springer, Berlin, Germany, 2010.  
*Keywords:* SPOT.
- [148] T. Bartz-Beielstein, J. Ziegenhirt, W. Konen, O. Flasch, P. Koch, and M. Zaefferer. *SPOT: Sequential Parameter Optimization*, 2011. URL <http://cran.r-project.org/package=SPOT>. R package.
- [149] T. Bartz-Beielstein, J. Branke, B. Filipič, and J. Smith, editors. *Parallel Problem Solving from Nature, PPSN XIII*, volume 8672 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2014.
- [150] T. Bartz-Beielstein, B. Filipič, P. Korošec, and E.-G. Talbi, editors. *High-Performance Simulation-Based Optimization*. Springer International Publishing, Cham, Switzerland, 2020.
- [151] M. Basseur, A. Goëffon, A. Liefooghe, and S. Verel. **On Set-based Local Search for Multiobjective Combinatorial Optimization.** In C. Blum and E. Alba, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2013*, pages 471–478. ACM Press, New York, NY, 2013. ISBN 978-1-4503-1963-8. doi:10.1145/2463372.2463430.
- [152] M. Battistutta, A. Schaerf, and T. Urli. **Feature-based tuning of single-stage simulated annealing for examination timetabling.** In E. Özcan, E. K. Burke, and B. McCollum, editors, *PATAT 2014: Proceedings of the 10th International Conference of*

*the Practice and Theory of Automated Timetabling*, pages 53–61. PATAT, 2014.

*Keywords:* F-race.

- [153] M. Battistutta, A. Schaerf, and T. Urli. **Feature-based Tuning of Single-stage Simulated Annealing for Examination Timetabling.** *Annals of Operations Research*, 252(2):239–254, 2017.
- [154] R. Battiti and A. Passerini. **Brain-Computer Evolutionary Multiobjective Optimization: A Genetic Algorithm Adapting to the Decision Maker.** *IEEE Transactions on Evolutionary Computation*, 14(5):671–687, 2010. doi:[10.1109/TEVC.2010.2058118](https://doi.org/10.1109/TEVC.2010.2058118).  
*Keywords:* BC-EMOA.
- [155] R. Battiti and M. Protasi. **Reactive Search, A History-Based Heuristic for MAX-SAT.** *ACM Journal of Experimental Algorithmics*, 2, 1997.
- [156] R. Battiti and G. Tecchiolli. **Simulated annealing and Tabu search in the long run: A comparison on QAP tasks.** *Computer and Mathematics with Applications*, 28(6):1–8, 1994. doi:[10.1016/0898-1221\(94\)00147-2](https://doi.org/10.1016/0898-1221(94)00147-2).
- [157] R. Battiti and G. Tecchiolli. **The Reactive Tabu Search.** *ORSA Journal on Computing*, 6(2):126–140, 1994.
- [158] R. Battiti and G. Tecchiolli. **The continuous reactive tabu search: blending combinatorial optimization and stochastic search for global optimization.** *Annals of Operations Research*, 63(2):151–188, 1996.
- [159] R. Battiti, M. Brunato, and F. Mascia. *Reactive Search and Intelligent Optimization*, volume 45 of *Operations Research/Computer Science Interfaces*. Springer, New York, NY, 2008. doi:[10.1007/978-0-387-09624-7](https://doi.org/10.1007/978-0-387-09624-7).
- [160] R. Battiti, D. E. Kvasov, and Y. D. Sergeyev, editors. *11th International Conference, LION 11, Nizhny Novgorod, Russia, June 19-21, 2017, Revised Selected Papers*, volume 10556 of *Lecture Notes in Computer Science*. Springer, Cham, Switzerland, 2017.
- [161] R. Battiti, M. Brunato, I. Kotsireas, and P. M. Pardalos, editors. *12th International Conference, LION 12, Kalamata, Greece, June 10-15, 2018*, volume 11353 of *Lecture Notes in Computer Science*. Springer, Cham, Switzerland, 2018.
- [162] E. B. Baum. **Iterated Descent: A Better Algorithm for Local Search in Combinatorial Optimization Problems.** Manuscript, 1986.
- [163] E. B. Baum. **Towards Practical “Neural” Computation for Combinatorial Optimization Problems.** In *Neural Networks for Computing, AIP Conference Proceedings*, pages 53–64, 1986.
- [164] J. Baumgartner and M. Sheeran, editors. *FMCAD’07: Proceedings of the 7th International Conference Formal Methods in Computer Aided Design*, Austin, Texas, USA, 2007. IEEE Computer Society, Washington, DC, USA.
- [165] W. J. Baumol. **Management models and industrial applications of linear programming.** *Naval Research Logistics Quarterly*, 9(1):63–64, 1962. doi:[10.1002/nav.3800090109](https://doi.org/10.1002/nav.3800090109).

- [166] J. Bautista and J. Pereira. **Ant algorithms for a time and space constrained assembly line balancing problem.** *European Journal of Operational Research*, 177(3): 2016–2032, 2007. doi:[10.1016/j.ejor.2005.12.017](https://doi.org/10.1016/j.ejor.2005.12.017).
- [167] J. Baxter. **Local Optima Avoidance in Depot Location.** *Journal of the Operational Research Society*, 32(9):815–819, 1981.
- [168] A. Baykasoglu, T. Dereli, and I. Sabuncu. **A multiple objective ant colony optimization approach to assembly line balancing problems.** In *35th International Conference on Computers and Industrial Engineering (CIE35)*, pages 263–268, Istanbul, Turkey, 2005.
- [169] B. Beachkofski and R. Grandhi. **Improved Distributed Hypercube Sampling.** In *Proceedings of the 43rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*. AIAA paper 2002-1274, American Institute of Aeronautics and Astronautics, 2002.
- [170] J. Bealt, D. Shaw, C. M. Smith, and M. López-Ibáñez. **Peer Reviews for Making Cities Resilient: A Systematic Literature Review.** *International Journal of Emergency Management*, 15(4):334–359, 2019. doi:[10.1504/IJEM.2019.104201](https://doi.org/10.1504/IJEM.2019.104201).  
*Keywords:* city resilience, city peer review, disaster risk governance.
- [171] J. E. Beasley. **OR-Library: distributing test problems by electronic mail.** *Journal of the Operational Research Society*, pages 1069–1072, 1990. Currently available from <http://people.brunel.ac.uk/~mastjjb/jeb/info.html>.
- [172] J. E. Beasley and P. C. Chu. **A Genetic Algorithm for the Set Covering Problem.** *European Journal of Operational Research*, 94(2):392–404, 1996.
- [173] J. E. Beasley and P. C. Chu. **A Genetic Algorithm for the Multidimensional Knapsack Problem.** *Journal of Heuristics*, 4(1):63–86, 1998.
- [174] S. Becker, J. Gottlieb, and T. Stützle. **Applications of Racing Algorithms: An Industrial Perspective.** In E.-G. Talbi, P. Liardet, P. Collet, E. Lutton, and M. Schoenauer, editors, *Artificial Evolution*, volume 3871 of *Lecture Notes in Computer Science*, pages 271–283. Springer, Heidelberg, Germany, 2005.
- [175] D. D. Bedworth and J. E. Bailey. *Integrated Production Control Systems: Management, Analysis, Design*, volume 2. John Wiley & Sons, New York, NY, 1982.
- [176] J. Behnamian and S. Fatemi Ghomi. **Hybrid Flowshop Scheduling with Machine and Resource-dependent Processing Times.** *Applied Mathematical Modelling*, 35(3):1107–1123, 2011.
- [177] M. Behrisch, L. Bieker, J. Erdmann, and D. Krajzewicz. **SUMO - Simulation of Urban MObility: An Overview.** In *SIMUL 2011, The Third International Conference on Advances in System Simulation*, pages 63–68, Barcelona, Spain, 2011. ThinkMind.
- [178] N. Beldiceanu, N. Jussien, and E. Pinson, editors. *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems – 9th International Conference, CPAIOR 2012, Nantes, France, May 28 – June 1, 2012. Proceedings*, volume 7298 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2012. ISBN 978-3-642-29827-1.



- [179] R. K. Belew and M. D. Vose, editors. *Proceedings of the 4th Workshop on Foundations of Genetic Algorithms, San Diego, CA, USA, August 5 1996*. Morgan Kaufmann Publishers, 1996.
- [180] N. Belkhir, J. Dréo, P. Savéant, and M. Schoenauer. **Per Instance Algorithm Configuration of CMA-ES with Limited Budget**. In P. A. N. Bosman, editor, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2017*, pages 681–688. ACM Press, New York, NY, 2017.
- [181] R. Bellman. **The theory of dynamic programming**. *Bulletin of the American Mathematical Society*, 60:503 – 515, 1954.
- [182] A. Belov, D. Diepold, M. Heule, and M. Järvisalo, editors. *Proceedings of SAT Competition 2014: Solver and Benchmark Descriptions*, volume B-2014-2 of *Science Series of Publications B*, 2014. University of Helsinki.
- [183] V. Belton, J. Branke, P. Eskelinen, S. Greco, J. Molina, F. Ruiz, and R. Słowiński. **Interactive Multiobjective Optimization from a Learning Perspective**. In J. Branke, K. Deb, K. Miettinen, and R. Słowiński, editors, *Multi-objective Optimization: Interactive and Evolutionary Approaches*, volume 5252 of *Lecture Notes in Computer Science*, pages 405–433. Springer, Heidelberg, Germany, 2008. doi:10.1007/978-3-540-88908-3\_15.
- [184] F. Ben Abdelaziz, S. Krichen, and J. Chaouachi. **A hybrid heuristic for multiobjective knapsack problems**. In M. G. C. Resende and J. Pinho de Souza, editors, *Proceedings of MIC 1997, the 2nd Metaheuristics International Conference*, pages 205–212, 1997. doi:10.1007/978-1-4615-5775-3\_14.
- [185] A. J. Benavides and M. Ritt. **Iterated Local Search Heuristics for Minimizing Total Completion Time in Permutation and Non-permutation Flow Shops**. In R. I. Brafman, C. Domshlak, P. Haslum, and S. Zilberstein, editors, *Proceedings of the Twenty-Fifth International Conference on Automated Planning and Scheduling, ICAPS 2015*, pages 34–41. AAAI Press, Menlo Park, CA, 2015.
- [186] A. J. Benavides and M. Ritt. **Two Simple and Effective Heuristics for Minimizing the Makespan in Non-permutation Flow Shops**. *Computers & Operations Research*, 66:160–169, 2016. doi:10.1016/j.cor.2015.08.001.
- [187] C. J. Bendell, S. Liu, T. Aumentado-Armstrong, B. Istrate, P. T. Cernek, S. Khan, S. Picioreanu, M. Zhao, and R. A. Murgita. **Transient protein-protein interface prediction: datasets, features, algorithms, and the RAD-T predictor**. *BMC Bioinformatics*, 15:82, 2014.
- [188] J. F. Benders. **Partitioning Procedures for Solving Mixed-variables Programming Problems**. *Numerische Mathematik*, 4(3):238–252, 1962.
- [189] S. Benedettini, A. Roli, and L. Di Gaspero. **Two-level ACO for Haplotype Inference under Pure Parsimony**. In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 6th International Conference, ANTS 2008*, volume 5217 of *Lecture Notes in Computer Science*, pages 179–190. Springer, Heidelberg, Germany, 2008.
- [190] S. Benedettini, A. Roli, and C. Blum. **A Randomized Iterated Greedy Algorithm for the Founder Sequence Reconstruction Problem**. In C. Blum and R. Battiti,

- editors, *Learning and Intelligent Optimization, 4th International Conference, LION 4*, volume 6073 of *Lecture Notes in Computer Science*, pages 37–51. Springer, Heidelberg, Germany, 2010. doi:10.1007/978-3-642-13800-3.
- [191] U. Benlic and J.-K. Hao. **Breakout Local Search for the Quadratic Assignment Problem**. *Applied Mathematics and Computation*, 219(9):4800–4815, 2013.
- [192] J. L. Bentley. **Experiments on Traveling Salesman Heuristics**. In D. S. Johnson, editor, *Proceedings of the First Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 91–99. Society for Industrial and Applied Mathematics, Philadelphia, PA, USA, 1990.
- [193] J. L. Bentley. **Fast Algorithms for Geometric Traveling Salesman Problems**. *ORSA Journal on Computing*, 4(4):387–411, 1992.
- [194] J. S. Bergstra and Y. Bengio. **Random Search for Hyper-Parameter Optimization**. *Journal of Machine Learning Research*, 13:281–305, 2012.
- [195] J. S. Bergstra, R. Bardenet, Y. Bengio, and B. Kégl. **Algorithms for Hyper-Parameter Optimization**. In J. Shawe-Taylor, R. S. Zemel, P. L. Bartlett, F. Pereira, and K. Q. Weinberger, editors, *Advances in Neural Information Processing Systems (NIPS 24)*, pages 2546–2554. Curran Associates, Red Hook, NY, 2011. URL <http://papers.nips.cc/paper/4443-algorithms-for-hyper-parameter-optimization.pdf>.
- [196] H. Bersini, M. Dorigo, S. Langerman, G. Seront, and L. M. Gambardella. **Results of the First International Contest on Evolutionary Optimisation**. In T. Bäck, T. Fukuda, and Z. Michalewicz, editors, *Proceedings of the 1996 IEEE International Conference on Evolutionary Computation (ICEC’96)*, pages 611–615, Piscataway, NJ, 1996. IEEE Press.
- [197] T. Berthold, A. M. Gleixner, S. Heinz, and T. Koch, editors. *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems – 8th International Conference, CPAIOR 2011, Berlin, Germany, May 23 – 27, 2011. Proceedings*. Lecture Notes in Computer Science. Springer, Heidelberg, Germany, 2011.
- [198] D. Bertsekas. *Dynamic Programming and Optimal Control*. Athena Scientific, Belmont, MA, 1995.
- [199] D. Bertsekas. *Network Optimization: Continuous and Discrete Models*. Athena Scientific, Belmont, MA, 1998.
- [200] D. P. Bertsekas, J. N. Tsitsiklis, and C. Wu. **Rollout Algorithms for Combinatorial Optimization**. *Journal of Heuristics*, 3(3):245–262, 1997.
- [201] N. Beume and G. Rudolph. **Faster S-Metric Calculation by Considering Dominated Hypervolume as Klee’s Measure Problem**. In B. Kovalerchuk, editor, *Proceedings of the Second IASTED Conference on Computational Intelligence*, pages 231–236. ACTA Press, Anaheim, 2006.
- [202] N. Beume, C. M. Fonseca, M. López-Ibáñez, L. Paquete, and J. Vahrenhold. **On the Complexity of Computing the Hypervolume Indicator**. Technical Report CI-235/07, University of Dortmund, Dec. 2007. Published in IEEE Transactions on Evolutionary Computation [204].

- [203] N. Beume, B. Naujoks, and M. T. M. Emmerich. **SMS-EMOA: Multiobjective selection based on dominated hypervolume.** *European Journal of Operational Research*, 181(3):1653–1669, 2007. doi:10.1016/j.ejor.2006.08.008.
- [204] N. Beume, C. M. Fonseca, M. López-Ibáñez, L. Paquete, and J. Vahrenhold. **On the complexity of computing the hypervolume indicator.** *IEEE Transactions on Evolutionary Computation*, 13(5):1075–1082, 2009. doi:10.1109/TEVC.2009.2015575.
- [205] H. Beyer and U. O'Reilly, editors. *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2005*. ACM Press, New York, NY, 2005.
- [206] H.-G. Beyer and H.-P. Schwefel. **Evolution strategies: a comprehensive introduction.** *Natural Computing*, 1:3–52, 2002.
- [207] L. C. T. Bezerra. *A component-wise approach to multi-objective evolutionary algorithms: from flexible frameworks to automatic design*. PhD thesis, IRIDIA, École polytechnique, Université Libre de Bruxelles, Belgium, 2016.
- [208] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Automatic Generation of Multi-objective ACO Algorithms for the Biobjective Knapsack.** In M. Dorigo et al., editors, *Swarm Intelligence, 8th International Conference, ANTS 2012*, volume 7461 of *Lecture Notes in Computer Science*, pages 37–48. Springer, Heidelberg, Germany, 2012. doi:10.1007/978-3-642-32650-9\_4. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2012-008/>.
- [209] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Automatic Generation of MOACO Algorithms for the Biobjective Bidimensional Knapsack Problem: Supplementary material.** <http://iridia.ulb.ac.be/supp/IridiaSupp2012-008/>, 2012.
- [210] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **An Analysis of Local Search for the Bi-objective Bidimensional Knapsack: Supplementary material.** <http://iridia.ulb.ac.be/supp/IridiaSupp2012-016/>, 2013.
- [211] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Deconstructing Multi-Objective Evolutionary Algorithms: An Iterative Analysis on the Permutation Flowshop: Supplementary material.** <http://iridia.ulb.ac.be/supp/IridiaSupp2013-010/>, 2013.
- [212] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **An Analysis of Local Search for the Bi-objective Bidimensional Knapsack Problem.** In M. Middendorf and C. Blum, editors, *Proceedings of EvoCOP 2013 – 13th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 7832 of *Lecture Notes in Computer Science*, pages 85–96. Springer, Heidelberg, Germany, 2013. doi:10.1007/978-3-642-37198-1\_8.
- [213] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Automatic Component-Wise Design of Multi-Objective Evolutionary Algorithms.** Technical Report TR/IRIDIA/2014-012, IRIDIA, Université Libre de Bruxelles, Belgium, Aug. 2014.
- [214] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Deconstructing Multi-Objective Evolutionary Algorithms: An Iterative Analysis on the Permutation Flowshop.** In P. M. Pardalos, M. G. C. Resende, C. Vogiatzis, and J. L. Walteros,

- editors, *Learning and Intelligent Optimization, 8th International Conference, LION 8*, volume 8426 of *Lecture Notes in Computer Science*, pages 57–172. Springer, Heidelberg, Germany, 2014. doi:10.1007/978-3-319-09584-4\_16. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2013-010/>.
- [215] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Automatic Design of Evolutionary Algorithms for Multi-Objective Combinatorial Optimization**. In T. Bartz-Beielstein, J. Branke, B. Filipič, and J. Smith, editors, *PPSN 2014*, volume 8672 of *Lecture Notes in Computer Science*, pages 508–517. Springer, Heidelberg, Germany, 2014. doi:10.1007/978-3-319-10762-2\_50.
- [216] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Automatic Design of Evolutionary Algorithms for Multi-Objective Combinatorial Optimization**. <http://iridia.ulb.ac.be/supp/IridiaSupp2014-007/>, 2014.
- [217] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Automatic Component-Wise Design of Multi-Objective Evolutionary Algorithms**. <http://iridia.ulb.ac.be/supp/IridiaSupp2014-010/>, 2015.
- [218] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **To DE or Not to DE? Multi-objective Differential Evolution Revisited from a Component-Wise Perspective: Supplementary material**. <http://iridia.ulb.ac.be/supp/IridiaSupp2015-001/>, 2015.
- [219] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **To DE or Not to DE? Multi-objective Differential Evolution Revisited from a Component-Wise Perspective**. In A. Gaspar-Cunha, C. H. Antunes, and C. A. Coello Coello, editors, *Evolutionary Multi-criterion Optimization, EMO 2015 Part I*, volume 9018 of *Lecture Notes in Computer Science*, pages 48–63. Springer, Heidelberg, Germany, 2015. doi:10.1007/978-3-319-15934-8\_4.
- [220] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Comparing Decomposition-Based and Automatically Component-Wise Designed Multi-Objective Evolutionary Algorithms**. In A. Gaspar-Cunha, C. H. Antunes, and C. A. Coello Coello, editors, *Evolutionary Multi-criterion Optimization, EMO 2015 Part I*, volume 9018 of *Lecture Notes in Computer Science*, pages 396–410. Springer, Heidelberg, Germany, 2015. doi:10.1007/978-3-319-15934-8\_27.
- [221] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Automatic Component-Wise Design of Multi-Objective Evolutionary Algorithms**. *IEEE Transactions on Evolutionary Computation*, 20(3):403–417, 2016. doi:10.1109/TEVC.2015.2474158. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2014-010/>.
- [222] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Automatically designing and understanding evolutionary algorithms for multi- and many-objective optimization**, 2016. To be submitted.
- [223] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **An empirical assessment of the properties of inverted generational distance indicators on multi- and many-objective optimization: Supplementary material**. <http://iridia.ulb.ac.be/supp/IridiaSupp2016-006/>, 2016.

- [224] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **A Large-Scale Experimental Evaluation of High-Performing Multi- and Many-Objective Evolutionary Algorithms.** <http://iridia.ulb.ac.be/supp/IridiaSupp2015-007/>, 2017.
- [225] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **A Large-Scale Experimental Evaluation of High-Performing Multi- and Many-Objective Evolutionary Algorithms.** Technical Report TR/IRIDIA/2017-005, IRIDIA, Université Libre de Bruxelles, Belgium, Feb. 2017.
- [226] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **An Empirical Assessment of the Properties of Inverted Generational Distance Indicators on Multi- and Many-objective Optimization.** In H. Trautmann, G. Rudolph, K. Klamroth, O. Schütze, M. M. Wiecek, Y. Jin, and C. Grimme, editors, *Evolutionary Multi-criterion Optimization, EMO 2017*, Lecture Notes in Computer Science, pages 31–45. Springer International Publishing, Cham, Switzerland, 2017. doi:10.1007/978-3-319-54157-0\_3.
- [227] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **A Large-Scale Experimental Evaluation of High-Performing Multi- and Many-Objective Evolutionary Algorithms.** Technical Report TR/IRIDIA/2017-005, IRIDIA, Université Libre de Bruxelles, Belgium, Nov. 2017.
- [228] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Automatic Configuration of Multi-objective Optimizers and Multi-objective Configuration.** Technical Report TR/IRIDIA/2017-011, IRIDIA, Université Libre de Bruxelles, Belgium, Nov. 2017. URL <http://iridia.ulb.ac.be/IridiaTrSeries/link/IridiaTr2017-011.pdf>. Published as [235].
- [229] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **A Large-Scale Experimental Evaluation of High-Performing Multi- and Many-Objective Evolutionary Algorithms.** *Evolutionary Computation*, 26(4):621–656, 2018. doi:10.1162/evco\_a\_00217. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2015-007/>.
- [230] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Automatically Designing State-of-the-Art Multi- and Many-Objective Evolutionary Algorithms.** Technical Report TR/IRIDIA/2018-001, IRIDIA, Université Libre de Bruxelles, Belgium, Jan. 2018. URL <http://iridia.ulb.ac.be/IridiaTrSeries/IridiaTr2018-001.pdf>. Published as [231].
- [231] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Automatically Designing State-of-the-Art Multi- and Many-Objective Evolutionary Algorithms.** *Evolutionary Computation*, 2019. doi:10.1162/evco\_a\_00263. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2016-004/>.
- [232] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Automatically Designing State-of-the-Art Multi- and Many-Objective Evolutionary Algorithms: Supplementary material.** <http://iridia.ulb.ac.be/supp/IridiaSupp2016-004/>, 2019.
- [233] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Archiver Effects on the Performance of State-of-the-art Multi- and Many-objective Evolutionary**



- Algorithms: Supplementary material.** In M. López-Ibáñez, A. Auger, and T. Stützle, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2019*. ACM Press, New York, NY, 2019. ISBN 978-1-4503-6111-8. doi:10.1145/3321707.3321789. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2019-004/>.
- [234] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Archiver Effects on the Performance of State-of-the-art Multi- and Many-objective Evolutionary Algorithms: Supplementary material.** <http://iridia.ulb.ac.be/supp/IridiaSupp2019-004/>, 2019.
- [235] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Automatic Configuration of Multi-objective Optimizers and Multi-objective Configuration.** In T. Bartz-Beielstein, B. Filipič, P. Korošec, and E.-G. Talbi, editors, *High-Performance Simulation-Based Optimization*, pages 69–92. Springer International Publishing, Cham, Switzerland, 2020. doi:10.1007/978-3-030-18764-4\_4.
- [236] L. Bianchi, L. M. Gambardella, and M. Dorigo. **An Ant Colony Optimization Approach to the Probabilistic Traveling Salesman Problem.** In J. J. Merelo et al., editors, *Parallel Problem Solving from Nature, PPSN VII*, volume 2439 of *Lecture Notes in Computer Science*, pages 883–892. Springer, Heidelberg, Germany, 2002.
- [237] L. Bianchi, M. Birattari, M. Manfrin, M. Mastrolilli, L. Paquete, O. Rossi-Doria, and T. Schiavinotto. **Hybrid Metaheuristics for the Vehicle Routing Problem with Stochastic Demands.** *Journal of Mathematical Modelling and Algorithms*, 5(1):91–110, 2006.
- [238] L. Bianchi, M. Dorigo, L. M. Gambardella, and W. J. Gutjahr. **A survey on metaheuristics for stochastic combinatorial optimization.** *Natural Computing*, 8(2):239–287, 2009.
- [239] A. Biedenkapp, M. Lindauer, K. Eggenberger, F. Hutter, C. Fawcett, and H. H. Hoos. **Efficient Parameter Importance Analysis via Ablation with Surrogates.** In S. P. Singh and S. Markovitch, editors, *AAAI Conference on Artificial Intelligence*. AAAI Press, Feb. 2017. URL <https://aaai.org/ocs/index.php/AAAI/AAAI17/paper/view/14750>.
- [240] A. Biedenkapp, J. Marben, M. Lindauer, and F. Hutter. **Cave: Configuration assessment, visualization and evaluation.** In R. Battiti, M. Brunato, I. Kotsireas, and P. M. Pardalos, editors, *Learning and Intelligent Optimization, 12th International Conference, LION 12*, volume 11353 of *Lecture Notes in Computer Science*, pages 115–130, Cham, Switzerland, 2018. Springer.
- [241] A. Biere. **Yet another Local Search Solver and Lingeling and Friends Entering the SAT Competition 2014.** In A. Belov, D. Diepold, M. Heule, and M. Jarvisalo, editors, *Proceedings of SAT Competition 2014: Solver and Benchmark Descriptions*, volume B-2014-2 of *Science Series of Publications B*, pages 39–40. University of Helsinki, 2014.
- [242] G. Bilchev and I. C. Parmee. **The Ant Colony Metaphor for Searching Continuous Design Spaces.** In T. C. Fogarty, editor, *Evolutionary Computing, AISB Workshop*, volume 993 of *Lecture Notes in Computer Science*, pages 25–39. Springer, Heidelberg, Germany, Heidelberg, Germany, 1995. doi:10.1007/3-540-60469-3\_22.



- [243] M. Binois, D. Ginsbourger, and O. Roustant. **Quantifying uncertainty on Pareto fronts with Gaussian process conditional simulations.** *European Journal of Operational Research*, 243(2):386–394, 2015. doi:10.1016/j.ejor.2014.07.032.  
*Keywords:* Attainment function, Expected Hypervolume Improvement, Kriging, Multi-objective optimization, Vorob’ev expectation.
- [244] M. Birattari. **The race Package for R: Racing Methods for the Selection of the Best.** Technical Report TR/IRIDIA/2003-037, IRIDIA, Université Libre de Bruxelles, Belgium, 2003.
- [245] M. Birattari. *The Problem of Tuning Metaheuristics as Seen from a Machine Learning Perspective.* PhD thesis, IRIDIA, École polytechnique, Université Libre de Bruxelles, Belgium, 2004.  
*Annotation:* Supervised by Marco Dorigo.
- [246] M. Birattari. **On the Estimation of the Expected Performance of a Metaheuristic on a Class of Instances. How Many Instances, How Many Runs?** Technical Report TR/IRIDIA/2004-001, IRIDIA, Université Libre de Bruxelles, Belgium, 2004.
- [247] M. Birattari. *Tuning Metaheuristics: A Machine Learning Perspective*, volume 197 of *Studies in Computational Intelligence*. Springer, Berlin, Heidelberg, 2009. doi:10.1007/978-3-642-00483-4.
- [248] M. Birattari, G. A. Di Caro, and M. Dorigo. **Toward the formal foundation of Ant Programming.** In M. Dorigo et al., editors, *Ant Algorithms, Third International Workshop, ANTS 2002*, volume 2463 of *Lecture Notes in Computer Science*, pages 188–201. Springer, Heidelberg, Germany, 2002.
- [249] M. Birattari, T. Stützle, L. Paquete, and K. Varrentrapp. **A Racing Algorithm for Configuring Metaheuristics.** In W. B. Langdon et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2002*, pages 11–18. Morgan Kaufmann Publishers, San Francisco, CA, 2002.  
*Keywords:* F-race.
- [250] M. Birattari, P. Balaprakash, and M. Dorigo. **The ACO/F-RACE algorithm for combinatorial optimization under uncertainty.** In K. F. Doerner, M. Gendreau, P. Greistorfer, W. J. Gutjahr, R. F. Hartl, and M. Reimann, editors, *Metaheuristics – Progress in Complex Systems Optimization*, volume 39 of *Operations Research/Computer Science Interfaces Series*, pages 189–203. Springer, New York, NY, 2006.
- [251] M. Birattari, M. Zlochin, and M. Dorigo. **Towards a theory of practice in metaheuristics design: A machine learning perspective.** *Theoretical Informatics and Applications*, 40(2):353–369, 2006.
- [252] M. Birattari, P. Pellegrini, and M. Dorigo. **On the invariance of ant colony optimization.** *IEEE Transactions on Evolutionary Computation*, 11(6):732–742, 2007. doi:10.1109/TEVC.2007.892762.
- [253] M. Birattari, P. Balaprakash, T. Stützle, and M. Dorigo. **Estimation Based Local Search for Stochastic Combinatorial Optimization.** *INFORMS Journal on Computing*, 20(4):644–658, 2008.

- [254] M. Birattari, Z. Yuan, P. Balaprakash, and T. Stützle. **F-Race and Iterated F-Race: An Overview**. In T. Bartz-Beielstein, M. Chiarandini, L. Paquete, and M. Preuss, editors, *Experimental Methods for the Analysis of Optimization Algorithms*, pages 311–336. Springer, Berlin, Germany, 2010.  
*Keywords:* F-race, iterated F-race, irace, tuning.
- [255] M. Birattari, Z. Yuan, P. Balaprakash, and T. Stützle. **Parameter Adaptation in Ant Colony Optimization**. In M. Caserta and S. Voß, editors, *Proceedings of MIC 2009, the 8th Metaheuristics International Conference*, Hamburg, Germany, 2010. University of Hamburg.
- [256] M. Birattari, M. Chiarandini, M. Saerens, and T. Stützle. **Learning Graphical Models for Algorithm Configuration**. In T. Berthold, A. M. Gleixner, S. Heinz, and T. Koch, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems*, Lecture Notes in Computer Science. Springer, Heidelberg, Germany, 2011.
- [257] M. Birattari, M. Chiarandini, M. Saerens, and T. Stützle. **Learning graphical models for parameter tuning**. Technical Report TR/IRIDIA/2011-002, IRIDIA, Université Libre de Bruxelles, Belgium, 2011. URL <http://iridia.ulb.ac.be/IridiaTrSeries/IridiaTr2011-002.pdf>.
- [258] S. Bird, E. Klein, and E. Loper. *Natural language processing with Python: analyzing text with the natural language toolkit*. " O'Reilly Media, Inc.", 2009.
- [259] F. Biscani, D. Izzo, and C. H. Yam. **A Global Optimisation Toolbox for Massively Parallel Engineering Optimisation**. In *Astrodynamics Tools and Techniques (ICATT 2010), 4th International Conference on*, 2010. URL <http://arxiv.org/abs/1004.3824>.  
*Keywords:* PaGMO.
- [260] F. Biscani, D. Izzo, and C. H. Yam. **A Global Optimisation Toolbox for Massively Parallel Engineering Optimisation**. *Arxiv preprint arXiv:1004.3824*, 2010. URL <http://arxiv.org/abs/1004.3824>.  
*Keywords:* PaGMO.
- [261] B. Bischl, O. Mersmann, H. Trautmann, and M. Preuss. **Algorithm Selection Based on Exploratory Landscape Analysis and Cost-sensitive Learning**. In T. Soule and J. H. Moore, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2012*, pages 313–320. ACM Press, New York, NY, 2012.  
*Keywords:* continuous optimization, landscape analysis, algorithm selection.
- [262] B. Bischl, M. Lang, J. Bossek, L. Judt, J. Richter, T. Kuehn, and E. Studerus. *mlr: Machine Learning in R*, 2013. URL <http://cran.r-project.org/package=mlr>. R package.
- [263] B. Bischl, P. Kerschke, L. Kotthoff, M. T. Lindauer, Y. Malitsky, A. Fréchette, H. H. Hoos, F. Hutter, K. Leyton-Brown, K. Tierney, and J. Vanschoren. **ASlib: A Benchmark Library for Algorithm Selection**. *Artificial Intelligence*, 237:41–58, 2016.
- [264] B. Bischl, M. Lang, L. Kotthoff, J. Schiffner, J. Richter, E. Studerus, G. Casalicchio, and Z. M. Jones. **mlr: Machine Learning in R**. *Journal of Machine Learning Research*, 17(170):1–5, 2016.

- [265] B. Bischl, M. Lang, J. Bossek, D. Horn, K. Schork, J. Richter, and P. Kerschke. *ParamHelpers : Helpers for Parameters in Black-Box Optimization, Tuning and Machine Learning*, 2017. URL <https://cran.r-project.org/package=ParamHelpers>. R package version 1.10.
- [266] B. Bischl, J. Richter, J. Bossek, D. Horn, J. Thomas, and M. Lang. **mlrMBO: A Modular Framework for Model-Based Optimization of Expensive Black-Box Functions**. *Arxiv preprint arXiv:1703.03373 [stat.ML]*, 2017. URL <http://arxiv.org/abs/1703.03373>.
- [267] C. M. Bishop. *Pattern recognition and machine learning*. Springer, 2006.
- [268] E. Biyik, J. Margoliash, S. R. Alimo, and D. Sadigh. **Efficient and Safe Exploration in Deterministic Markov Decision Processes with Unknown Transition Models**. In *2019 American Control Conference (ACC)*, pages 1792–1799. IEEE, 2019. doi:10.23919/ACC.2019.8815276.
- [269] C. Blackmore, O. Ray, and K. Eder. **Automatically Tuning the GCC Compiler to Optimize the Performance of Applications Running on Embedded Systems**. *Arxiv preprint arXiv:1703.08228*, 2017. URL <https://arxiv.org/abs/1703.08228>.
- [270] M. J. Blesa and C. Blum. **Ant Colony Optimization for the Maximum Edge-Disjoint Paths Problem**. In G. R. Raidl et al., editors, *Applications of Evolutionary Computing, Proceedings of EvoWorkshops 2004*, volume 3005 of *Lecture Notes in Computer Science*, pages 160–169. Springer, Heidelberg, Germany, 2004.
- [271] M. J. Blesa and C. Blum. **Finding edge-disjoint paths in networks by means of artificial ant colonies**. *Journal of Mathematical Modelling and Algorithms*, 6(3): 361–391, 2007.
- [272] M. J. Blesa, C. Blum, C. Cotta, A. J. Fernández, J. E. Gallardo, A. Roli, and M. Sampels, editors. *Hybrid Metaheuristics HM 2008, 5th International Workshop*, volume 5296 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2008.
- [273] M. J. Blesa, C. Blum, L. Di Gaspero, A. Roli, M. Sampels, and A. Schaerf, editors. *Hybrid Metaheuristics, 6th International Workshop, HM 2009, Udine, Italy, October 16-17, 2009. Proceedings*, volume 5818 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2009.
- [274] M. J. Blesa, C. Blum, P. Festa, A. Roli, and M. Sampels, editors. *Hybrid Metaheuristics, 8th International Workshop, HM 2013, Ischia, Italy, May 23-25, 2013. Proceedings*, volume 7919 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2013. ISBN 978-3-642-38515-5.
- [275] M. J. Blesa, C. Blum, and S. Voß, editors. *Hybrid Metaheuristics, 9th International Workshop, HM 2014, Hamburg, Germany, June 11-13, 2014. Proceedings*, volume 8457 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2014. ISBN 978-3-319-07643-0.
- [276] S. Bleuler, M. Laumanns, L. Thiele, and E. Zitzler. **PISA – A Platform and Programming Language Independent Interface for Search Algorithms**. In C. M. Fonseca, P. J. Fleming, E. Zitzler, K. Deb, and L. Thiele, editors, *Evolutionary Multi-criterion Optimization, EMO 2003*, volume 2632 of *Lecture Notes in Computer Science*, pages 494–508. Springer, Heidelberg, Germany, 2003.

- [277] A. Blot, H. H. Hoos, L. Jourdan, M.-E. Kessaci-Marmion, and H. Trautmann. **MO-ParamILS: A Multi-objective Automatic Algorithm Configuration Framework**. In P. Festa, M. Sellmann, and J. Vanschoren, editors, *Learning and Intelligent Optimization, 10th International Conference, LION 10*, volume 10079 of *Lecture Notes in Computer Science*, pages 32–47. Springer, Cham, Switzerland, 2016.
- [278] A. Blot, L. Jourdan, and M.-E. Kessaci-Marmion. **Automatic design of multi-objective local search algorithms: case study on a bi-objective permutation flowshop scheduling problem**. In P. A. N. Bosman, editor, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2017*, pages 227–234. ACM Press, New York, NY, 2017. doi:[10.1145/3071178.3071323](https://doi.org/10.1145/3071178.3071323).
- [279] A. Blot, A. Pernet, L. Jourdan, M.-E. Kessaci-Marmion, and H. H. Hoos. **Automatically Configuring Multi-objective Local Search Using Multi-objective Optimisation**. In H. Trautmann, G. Rudolph, K. Klamroth, O. Schütze, M. M. Wiecek, Y. Jin, and C. Grimme, editors, *Evolutionary Multi-criterion Optimization, EMO 2017*, Lecture Notes in Computer Science, pages 61–76. Springer International Publishing, Cham, Switzerland, 2017.
- [280] A. Blot, M. López-Ibáñez, M.-E. Kessaci-Marmion, and L. Jourdan. **New Initialisation Techniques for Multi-Objective Local Search: Application to the Bi-objective Permutation Flowshop**. In A. Auger, C. M. Fonseca, N. Lourenço, P. Machado, L. Paquete, and D. Whitley, editors, *Parallel Problem Solving from Nature - PPSN XV*, volume 11101 of *Lecture Notes in Computer Science*, pages 323–334. Springer, Cham, 2018. doi:[10.1007/978-3-319-99253-2\\_26](https://doi.org/10.1007/978-3-319-99253-2_26).
- [281] A. Blum, editor. *41st Annual Symposium on Foundations of Computer Science, FOCS 2000, 12-14 November 2000, Redondo Beach, California, USA*, 2000. IEEE Computer Society Press.
- [282] C. Blum. **Beam-ACO—Hybridizing Ant Colony Optimization with Beam Search: An Application to Open Shop Scheduling**. *Computers & Operations Research*, 32(6):1565–1591, 2005.
- [283] C. Blum. **Beam-ACO for simple assembly line balancing**. *INFORMS Journal on Computing*, 20(4):618–627, 2008. doi:[10.1287/ijoc.1080.0271](https://doi.org/10.1287/ijoc.1080.0271).
- [284] C. Blum and E. Alba, editors. *Genetic and Evolutionary Computation Conference, GECCO 2013, Proceedings, Amsterdam, The Netherlands, July 6-10, 2013*. ACM Press, New York, NY, 2013.
- [285] C. Blum and E. Alba, editors. *Genetic and Evolutionary Computation Conference, GECCO 2013, Companion Material Proceedings, Amsterdam, The Netherlands, July 6-10, 2013*. ACM Press, New York, NY, 2013.
- [286] C. Blum and R. Battiti, editors. *4th International Conference, LION 4, Venice, Italy, January 18-22, 2010. Selected Papers*, volume 6073 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2010. doi:[10.1007/978-3-642-13800-3](https://doi.org/10.1007/978-3-642-13800-3).
- [287] C. Blum and M. Dorigo. **The hyper-cube framework for ant colony optimization**. *IEEE Transactions on Systems, Man, and Cybernetics – Part B*, 34(2):1161–1172, 2004.

- [288] C. Blum and M. Dorigo. **Search Bias in Ant Colony Optimization: On the Role of Competition-Balanced Systems.** *IEEE Transactions on Evolutionary Computation*, 9(2):159–174, 2005.
- [289] C. Blum and M. López-Ibáñez. **Ant Colony Optimization.** In *The Industrial Electronics Handbook: Intelligent Systems*. CRC Press, second edition, 2011. ISBN 9781439802830. URL <http://www.crcpress.com/product/isbn/9781439802830>.
- [290] C. Blum and M. Mastrolilli. **Using Branch & Bound Concepts in Construction-Based Metaheuristics: Exploiting the Dual Problem Knowledge.** In T. Bartz-Beielstein, M. J. Blesa, C. Blum, B. Naujoks, A. Roli, G. Rudolph, and M. Sampels, editors, *Hybrid Metaheuristics*, volume 4771 of *Lecture Notes in Computer Science*, pages 123–139. Springer, Heidelberg, Germany, 2007.
- [291] C. Blum and D. Merkle, editors. *Swarm Intelligence—Introduction and Applications*. Natural Computing Series. Springer Verlag, Berlin, Germany, 2008.
- [292] C. Blum and G. Ochoa, editors. *Evolutionary Computation in Combinatorial Optimization – 14th European Conference, EvoCOP 2014, Granada, Spain, April 24-25, 2014, Proceedings*, volume 8600 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2014.
- [293] C. Blum and G. R. Raidl. *Hybrid Metaheuristics—Powerful Tools for Optimization*. Artificial Intelligence: Foundations, Theory, and Algorithms. Springer, Springer, Berlin, Germany, 2016.
- [294] C. Blum and A. Roli. **Metaheuristics in Combinatorial Optimization: Overview and Conceptual Comparison.** *ACM Computing Surveys*, 35(3):268–308, 2003.
- [295] C. Blum and A. Roli. **Hybrid metaheuristics: an introduction.** In C. Blum, M. J. Blesa, A. Roli, and M. Sampels, editors, *Hybrid Metaheuristics: An emergent approach for optimization*, volume 114 of *Studies in Computational Intelligence*, pages 1–30. Springer, Berlin, Germany, 2008.
- [296] C. Blum and M. Sampels. **An Ant Colony Optimization Algorithm for Shop Scheduling Problems.** *Journal of Mathematical Modelling and Algorithms*, 3(3): 285–308, 2004. doi:10.1023/B:JMAA.0000038614.39977.6f.
- [297] C. Blum and M. Yábar Vallès. **Multi-level ant colony optimization for DNA sequencing by hybridization.** In F. Almeida et al., editors, *Hybrid Metaheuristics*, volume 4030 of *Lecture Notes in Computer Science*, pages 94–109. Springer, Heidelberg, Germany, 2006. doi:10.1007/11890584.
- [298] C. Blum, J. Bautista, and J. Pereira. **Beam-ACO applied to assembly line balancing.** In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 5th International Workshop, ANTS 2006*, volume 4150 of *Lecture Notes in Computer Science*, pages 96–107. Springer, Heidelberg, Germany, 2006. doi:10.1007/11839088\_9.
- [299] C. Blum, C. Cotta, A. J. Fernández, and J. E. Gallardo. **A probabilistic beam search algorithm for the shortest common supersequence problem.** In C. Cotta et al., editors, *Proceedings of EvoCOP 2007 – Seventh European Conference on Evolutionary Computation in Combinatorial Optimisation*, volume 4446 of *Lecture Notes in Computer Science*, pages 36–47. Springer, Berlin, 2007.



- [300] C. Blum, M. J. Blesa, and M. López-Ibáñez. **Beam Search for the Longest Common Subsequence Problem**. Technical Report LSI-08-29, Department LSI, Universitat Politècnica de Catalunya, 2008. Published in *Computers & Operations Research* [303].
- [301] C. Blum, M. J. Blesa, A. Roli, and M. Sampels, editors. *Hybrid Metaheuristics: An emergent approach for optimization*, volume 114 of *Studies in Computational Intelligence*. Springer, Berlin, Germany, 2008.
- [302] C. Blum, M. Yábar Vallès, and M. J. Blesa. **An ant colony optimization algorithm for DNA sequencing by hybridization**. *Computers & Operations Research*, 35(11):3620–3635, 2008.
- [303] C. Blum, M. J. Blesa, and M. López-Ibáñez. **Beam search for the longest common subsequence problem**. *Computers & Operations Research*, 36(12):3178–3186, 2009. doi:10.1016/j.cor.2009.02.005.
- [304] C. Blum, J. Puchinger, G. R. Raidl, and A. Roli. **Hybrid Metaheuristics in Combinatorial Optimization: A Survey**. *Applied Soft Computing*, 11(6):4135–4151, 2011.
- [305] C. Blum, B. Calvo, and M. J. Blesa. **FrogCOL and FrogMIS: new decentralized algorithms for finding large independent sets in graphs**. *Swarm Intelligence*, 9(2-3):205–227, 2015. doi:10.1007/s11721-015-0110-1.  
Keywords: irace.
- [306] C. Blum, P. Pinacho, M. López-Ibáñez, and J. A. Lozano. **Construct, Merge, Solve & Adapt: A New General Algorithm for Combinatorial Optimization**. *Computers & Operations Research*, 68:75–88, 2016. doi:10.1016/j.cor.2015.10.014.  
Keywords: irace.
- [307] E. J. W. Boers et al., editors. *Applications of Evolutionary Computing, Proceedings of EvoWorkshops 2001*, volume 2037 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2001.
- [308] K. D. Boese. *Models for Iterative Global Optimization*. PhD thesis, University of California, Computer Science Department, Los Angeles, CA, 1996.
- [309] I. O. Bohachevsky, M. E. Johnson, and M. L. Stein. **Generalized Simulated Annealing for Function Optimization**. *Technometrics*, 28(3):209–217, 1986.
- [310] M. Bohanec. **Decision making: a computer-science and information-technology viewpoint**. *Interdisciplinary Description of Complex Systems*, 7(2):22–37, 2009.
- [311] B. Bollobás. *Random Graphs*. Cambridge University Press, New York, NY, 2nd edition, 2001.
- [312] B. Bonet and S. Koenig, editors. *Proceedings of the Twenty-Ninth AAAI Conference on Artificial Intelligence, AAAI 2015, Austin, Texas, USA, January 25-30, 2015*, 2015. AAAI Press.
- [313] G. Booch, J. E. Rumbaugh, and I. Jacobson. *The Unified Modeling Language User Guide*. Addison-Wesley, 2 edition, 2005.
- [314] P. C. Borges. **CHESS - Changing Horizon Efficient Set Search: A simple principle for multiobjective optimization**. *Journal of Heuristics*, 6(3):405–418, 2000.



- [315] P. C. Borges and M. P. Hansen. **A basis for future successes in multiobjective combinatorial optimization.** Technical Report IMM-REP-1998-8, Institute of Mathematical Modelling, Technical University of Denmark, Lyngby, Denmark, 1998.
- [316] A. Borodin and R. El-Yaniv. *Online computation and competitive analysis.* Cambridge University Press, New York, NY, 1998. ISBN 0-521-56392-5.
- [317] E. Boros, P. L. Hammer, and G. Tavares. **Local search heuristics for Quadratic Unconstrained Binary Optimization (QUBO).** *Journal of Heuristics*, 13(2):99–132, 2007.
- [318] P. A. N. Bosman, editor. *Genetic and Evolutionary Computation Conference, GECCO 2017, Berlin, Germany, July 15-19, 2017.* ACM Press, New York, NY, 2017.
- [319] P. A. N. Bosman, editor. *Genetic and Evolutionary Computation Conference, GECCO 2017, Berlin, Germany, July 15-19, 2017.* ACM Press, New York, NY, 2017.
- [320] J. Bossek. *smoof: Single and Multi-Objective Optimization Test Functions*, 2016. URL <http://CRAN.R-project.org/package=smoof>. R package version 1.2.
- [321] H. M. Botee and E. Bonabeau. **Evolving Ant Colony Optimization.** *Advances in Complex Systems*, 1:149–159, 1998.
- [322] S. Bouamama, C. Blum, and A. Boukerram. **A Population-based Iterated Greedy Algorithm for the Minimum Weight Vertex Cover Problem.** *Applied Soft Computing*, 12(6):1632–1639, 2012.
- [323] K. Bouleimen and H. Lecocq. **A new efficient simulated annealing algorithm for the resource-constrained project scheduling problem and its multiple mode version.** *European Journal of Operational Research*, 149(2):268–281, 2003. doi:10.1016/S0377-2217(02)00761-0.  
*Keywords:* multi-mode resource-constrained project scheduling, project scheduling, simulated annealing.
- [324] P. F. Boulos, C. H. Orr, W. de Schaetzen, J. G. Chatila, M. Moore, P. Hsiung, and D. Thomas. **Optimal pump operation of water distribution systems using genetic algorithms.** In *AWWA Distribution System Symp.*, Denver, USA, 2001. American Water Works Association.
- [325] G. Bous, P. Fortemps, F. Glineur, and M. Pirlot. **ACUTA: A novel method for eliciting additive value functions on the basis of holistic preference statements.** *European Journal of Operational Research*, 206(2):435–444, 2010.
- [326] C. Boutilier, editor. *IJCAI 2009, Proceedings of the 21st International Joint Conference on Artificial Intelligence, Pasadena, California, USA, July 11-17, 2009*, 2009. AAAI Press, Menlo Park, CA.
- [327] V. Bowman and J. Joseph. **On the Relationship of the Tchebycheff Norm and the Efficient Frontier of Multiple-Criteria Objectives.** In H. Thiriez and S. Zionts, editors, *Multiple Criteria Decision Making*, volume 130 of *Lecture Notes in Economics and Mathematical Systems*, pages 76–86. Springer, Berlin/Heidelberg, 1976. doi:10.1007/978-3-642-87563-2\_5.
- [328] G. E. P. Box and N. R. Draper. *Response surfaces, mixtures, and ridge analyses.* John Wiley & Sons, 2007.

- [329] G. E. P. Box, W. G. Hunter, and J. S. Hunter. *Statistics for experimenters: an introduction to design, data analysis, and model building*. John Wiley & Sons, New York, NY, 1978.
- [330] L. Bradstreet, L. Barone, L. While, S. Huband, and P. Hingston. **Use of the WFG Toolkit and PISA for Comparison of MOEAs**. In *IEEE Symposium on Computational Intelligence in Multicriteria Decision-Making, IEEE MCDM*, pages 382–389, 2007.
- [331] R. I. Brafman, F. Roberts, and A. Tsoukiàs, editors. *Algorithmic Decision Theory, Third International Conference, ADT 2011, Piscataway, New Jersey, USA, October 26-28, 2011*, volume 6992 of *Lecture Notes in Artificial Intelligence*. Springer, Heidelberg, Germany, 2011.
- [332] R. I. Brafman, C. Domshlak, P. Haslum, and S. Zilberstein, editors. *Proceedings of the Twenty-Fifth International Conference on Automated Planning and Scheduling, ICAPS 2015, Jerusalem, Israel, June 7-11, 2015*. AAAI Press, Menlo Park, CA, 2015.
- [333] S. C. Brailsford, W. J. Gutjahr, M. S. Rauner, and W. Zeppelzauer. **Combined Discrete-event Simulation and Ant Colony Optimisation Approach for Selecting Optimal Screening Policies for Diabetic Retinopathy**. *Computational Management Science*, 4(1):59–83, 2006.
- [334] A. Brandt. **Multilevel Computations: Review and Recent Developments**. In S. F. McCormick, editor, *Multigrid Methods: Theory, Applications, and Supercomputing, Proceedings of the 3rd Copper Mountain Conference on Multigrid Methods*, volume 110 of *Lecture Notes in Pure and Applied Mathematics*, pages 35–62. Marcel Dekker, New York, 1988.
- [335] J. Branke and J. Elomari. **Simultaneous tuning of metaheuristic parameters for various computing budgets**. In N. Krasnogor and P. L. Lanzi, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2011*, pages 263–264. ACM Press, New York, NY, 2011. doi:10.1145/2001858.2002006.  
*Keywords*: meta-optimization, offline parameter optimization.
- [336] J. Branke and J. Elomari. **Racing with a Fixed Budget and a Self-Adaptive Significance Level**. In P. M. Pardalos and G. Nicosia, editors, *Learning and Intelligent Optimization, 7th International Conference, LION 7*, volume 7997 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2013.
- [337] J. Branke, T. Kaussler, and H. Schmeck. **Guidance in evolutionary multi-objective optimization**. *Advances in Engineering Software*, 32:499–507, 2001.
- [338] J. Branke, C. Schmidt, and H. Schmeck. **Efficient fitness estimation in noisy environments**. In E. D. Goodman, editor, *Proceedings of the 3rd Annual Conference on Genetic and Evolutionary Computation, GECCO 2001*, pages 243–250. Morgan Kaufmann Publishers, San Francisco, CA, 2001.
- [339] J. Branke, K. Deb, K. Miettinen, and R. Słowiński, editors. *Multi-objective Optimization: Interactive and Evolutionary Approaches*, volume 5252 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2008.
- [340] J. Branke, S. Greco, R. Słowiński, and P. Zieliwicz. **Interactive evolutionary multiobjective optimization driven by robust ordinal regression**. *Bulletin of*

*the Polish Academy of Sciences: Technical Sciences*, 58(3):347–358, 2010. doi:10.2478/v10175-010-0033-3.

- [341] J. Branke, S. Corrente, S. Greco, R. Słowiński, and P. Zielniewicz. **Using Choquet integral as preference model in interactive evolutionary multiobjective optimization**. Technical report, WBS, University of Warwick, 2014.
- [342] J. Branke, S. Corrente, S. Greco, M. Kadzinski, M. López-Ibáñez, V. Mousseau, M. Munerato, and R. Słowiński. **Behavior-Realistic Artificial Decision-Makers to Test Preference-Based Multi-objective Optimization Method (Working Group “Machine Decision-Making”)**. In S. Greco, K. Klamroth, J. D. Knowles, and G. Rudolph, editors, *Understanding Complexity in Multiobjective Optimization (Dagstuhl Seminar 15031)*, volume 5(1) of *Dagstuhl Reports*, pages 110–116. Schloss Dagstuhl–Leibniz-Zentrum für Informatik, Germany, 2015. doi:10.4230/DagRep.5.1.96.  
*Keywords:* multiple criteria decision making, evolutionary multiobjective optimization.
- [343] J. Branke, S. Greco, R. Słowiński, and P. Zielniewicz. **Learning Value Functions in Interactive Evolutionary Multiobjective Optimization**. *IEEE Transactions on Evolutionary Computation*, 19(1):88–102, 2015.
- [344] J. Branke, S. Corrente, S. Greco, R. Słowiński, and P. Zielniewicz. **Using Choquet integral as preference model in interactive evolutionary multiobjective optimization**. *European Journal of Operational Research*, 250(3):884–901, 2016. doi:10.1016/j.ejor.2015.10.027.
- [345] J. Branke, S. S. Farid, and N. Shah. **Industry 4.0: a vision for personalized medicine supply chains?** *Cell and Gene Therapy Insights*, 2(2):263–270, 2016. doi:10.18609/cgti.2016.027.
- [346] J. Branke, S. Nguyen, C. W. Pickardt, and M. Zhang. **Automated Design of Production Scheduling Heuristics: A Review**. *IEEE Transactions on Evolutionary Computation*, 20(1):110–124, 2016.
- [347] J.-P. Brans and B. Mareschal. *PROMETHEE-GAIA. Une méthode d’aide à la décision en présence de critères multiples*. Editions Ellipses, Paris, FR, 2002. ISBN 2-7298-1253-9.
- [348] J.-P. Brans and B. Mareschal. **PROMETHEE Methods**. In J. R. Figueira, S. Greco, and M. Ehrgott, editors, *Multiple Criteria Decision Analysis, State of the Art Surveys*, chapter 5, pages 163–195. Springer, 2005.
- [349] R. Braune and G. Zäpfel. **Shifting Bottleneck Scheduling for Total Weighted Tardiness Minimization—A Computational Evaluation of Subproblem and Re-optimization Heuristics**. *Computers & Operations Research*, 66:130–140, 2016.
- [350] Y. Bravo, J. Ferrer, G. J. Luque, and E. Alba. **Smart Mobility by Optimizing the Traffic Lights: A New Tool for Traffic Control Centers**. In E. Alba, F. Chicano, and G. J. Luque, editors, *Smart Cities (Smart-CT 2016)*, Lecture Notes in Computer Science, pages 147–156. Springer, Cham, Switzerland, 2016. doi:10.1007/978-3-319-39595-1\_15.  
*Keywords:* Multi-objective optimization, Smart mobility, Traffic lights planning.
- [351] L. Breiman. **Random Forests**. *Machine Learning*, 45(1):5–32, 2001. doi:10.1023/A:1010933404324.

- [352] M. Brendel and M. Schoenauer. **Instance-based Parameter Tuning for Evolutionary AI Planning.** In N. Krasnogor and P. L. Lanzi, editors, *GECCO (Companion)*, pages 591–598, New York, NY, 2011. ACM Press. doi:10.1145/2001858.2002053.
- [353] M. Brendel and M. Schoenauer. **Learn-and-Optimize: A Parameter Tuning Framework for Evolutionary AI Planning.** In J.-K. Hao, P. Legrand, P. Collet, N. Monmarché, E. Lutton, and M. Schoenauer, editors, *Artificial Evolution: 10th International Conference, Evolution Artificielle, EA, 2011*, volume 7401 of *Lecture Notes in Computer Science*, pages 145–155. Springer, Heidelberg, Germany, 2012. doi:10.1007/978-3-642-35533-2\_13.
- [354] K. Bringmann and T. Friedrich. **Approximating the Least Hypervolume Contributor: NP-Hard in General, But Fast in Practice.** In M. Ehrgott, C. M. Fonseca, X. Gandibleux, J.-K. Hao, and M. Sevaux, editors, *Evolutionary Multi-criterion Optimization, EMO 2009*, volume 5467 of *Lecture Notes in Computer Science*, pages 6–20. Springer, Heidelberg, Germany, 2009.
- [355] K. Bringmann and T. Friedrich. **Don’t be greedy when calculating hypervolume contributions.** In I. I. Garibay, T. Jansen, R. P. Wiegand, and A. S. Wu, editors, *Proceedings of the Tenth ACM SIGEVO Workshop on Foundations of Genetic Algorithms (FOGA)*, pages 103–112. ACM, 2009. ISBN 978-1-60558-414-0.
- [356] K. Bringmann and T. Friedrich. **The Maximum Hypervolume Set Yields Near-optimal Approximation.** In M. Pelikan and J. Branke, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2010*, pages 511–518. ACM Press, New York, NY, 2010.
- [357] K. Bringmann and T. Friedrich. **Convergence of Hypervolume-Based Archiving Algorithms I: Effectiveness.** In N. Krasnogor and P. L. Lanzi, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2011*, pages 745–752. ACM Press, New York, NY, 2011. doi:10.1145/2001576.2001678.
- [358] K. Bringmann and T. Friedrich. **Convergence of Hypervolume-Based Archiving Algorithms II: Competitiveness.** In T. Soule and J. H. Moore, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2012*, pages 457–464. ACM Press, New York, NY, 2012. doi:10.1145/2330163.2330229.
- [359] K. Bringmann, T. Friedrich, F. Neumann, and M. Wagner. **Approximation-guided Evolutionary Multi-objective Optimization.** In T. Walsh, editor, *Proceedings of the Twenty-Second International Joint Conference on Artificial Intelligence (IJCAI-11)*, pages 1198–1203. IJCAI/AAAI Press, Menlo Park, CA, 2011.
- [360] D. R. Broad, G. C. Dandy, and H. R. Maier. **A Metamodeling Approach to Water Distribution System Optimization.** In *6th Annual Symposium on Water Distribution Systems Analysis*. ASCE, June 2004.
- [361] D. Brockhoff, M. López-Ibáñez, B. Naujoks, and G. Rudolph. **Runtime Analysis of Simple Interactive Evolutionary Biobjective Optimization Algorithms.** In C. A. Coello Coello et al., editors, *Parallel Problem Solving from Nature, PPSN XII*, volume 7491 of *Lecture Notes in Computer Science*, pages 123–132. Springer, Heidelberg, Germany, 2012. doi:10.1007/978-3-642-32937-1\_13.

- [362] D. Brockhoff, J. Bader, L. Thiele, and E. Zitzler. **Directed Multiobjective Optimization Based on the Weighted Hypervolume Indicator**. *Journal of Multi-Criteria Decision Analysis*, 20(5-6):291–317, 2013. doi:10.1002/mcda.1502.  
*Keywords:* hypervolume, preference-based search, multi objective optimization, evolutionary algorithm.
- [363] D. Brockhoff, R. Calandra, M. López-Ibáñez, F. Neumann, and S. Ulaganathan. **Meta-modeling for (interactive) multi-objective optimization (WG5)**. In K. Klamroth, J. D. Knowles, G. Rudolph, and M. M. Wiecek, editors, *Personalized Multiobjective Optimization: An Analytics Perspective (Dagstuhl Seminar 18031)*, volume 8(1) of *Dagstuhl Reports*, pages 85–94. Schloss Dagstuhl–Leibniz-Zentrum für Informatik, Germany, 2018. doi:10.4230/DagRep.8.1.33.  
*Keywords:* multiple criteria decision making, evolutionary multiobjective optimization.
- [364] P. Brucker, J. Hurink, and F. Werner. **Improving Local Search Heuristics for some Scheduling Problems — Part I**. *Discrete Applied Mathematics*, 65(1-3):97–122, 1996.
- [365] P. Brucker, J. Hurink, and F. Werner. **Improving Local Search Heuristics for some Scheduling Problems — Part II**. *Discrete Applied Mathematics*, 72(1-2):47–69, 1997.
- [366] A. Brum and M. Ritt. **Automatic Design of Heuristics for Minimizing the Makespan in Permutation Flow Shops**. In *2018 IEEE Congress on Evolutionary Computation (CEC)*, pages 1–8. IEEE, 2018.
- [367] A. Brum and M. Ritt. **Automatic Algorithm Configuration for the Permutation Flow Shop Scheduling Problem Minimizing Total Completion Time**. In *Evolutionary Computation in Combinatorial Optimization*, pages 85–100. Springer International Publishing, 2018.
- [368] M. J. Brusco, L. W. Jacobs, and G. M. Thompson. **A Morphing Procedure to Supplement a Simulated Annealing Heuristic for Cost- and Coverage-correlated Set Covering Problems**. *Annals of Operations Research*, 86: 611–627, 1999.
- [369] J. T. Buchanan. **An experimental evaluation of interactive MCDM methods and the decision making process**. *Journal of the Operational Research Society*, 45(9): 1050–1059, 1994.
- [370] A. L. Buchsbaum and M. T. Goodrich. **Three-Dimensional Layers of Maxima**. *Algorithmica*, 39:275–289, 2004.
- [371] T. N. Bui and J. R. Rizzo, Jr. **Finding Maximum Cliques with Distributed Ants**. In K. Deb et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2004, Part I*, volume 3102 of *Lecture Notes in Computer Science*, pages 24–35. Springer, Heidelberg, Germany, 2004.
- [372] B. Bullnheimer, R. F. Hartl, and C. Strauss. **An Improved Ant System Algorithm for the Vehicle Routing Problem**. *Annals of Operations Research*, 89:319–328, 1999.
- [373] B. Bullnheimer, R. F. Hartl, and C. Strauss. **A new rank-based version of the Ant System: A computational study**. *Central European Journal for Operations Research and Economics*, 7(1):25–38, 1999.



- [374] L. Buriol, P. M. França, and P. Moscato. **A New Memetic Algorithm for the Asymmetric Traveling Salesman Problem**. *Journal of Heuristics*, 10(5):483–506, 2004.
- [375] R. E. Burkard and F. Rendl. **A Thermodynamically Motivated Simulation Procedure for Combinatorial Optimization Problems**. *European Journal of Operational Research*, 17(2):169–174, 1984. doi:10.1016/0377-2217(84)90231-5.  
*Keywords*: 2-exchange delta evaluation for QAP.
- [376] R. E. Burkard, S. E. Karisch, and F. Rendl. **QAPLIB—a Quadratic Assignment Problem Library**. *Journal of Global Optimization*, 10(4):391–403, 1997.
- [377] R. E. Burkard, E. Çela, P. M. Pardalos, and L. S. Pitsoulis. **The quadratic assignment problem**. In P. M. Pardalos and D.-Z. Du, editors, *Handbook of Combinatorial Optimization*, volume 2, pages 241–338. Kluwer Academic Publishers, 1998.
- [378] E. K. Burke and Y. Bykov. **The Late Acceptance Hill-Climbing Heuristic**. Technical Report CSM-192, University of Stirling, 2012.
- [379] E. K. Burke and Y. Bykov. **The Late Acceptance Hill-Climbing Heuristic**. *European Journal of Operational Research*, 258(1):70–78, 2017.
- [380] E. K. Burke, M. R. Hyde, G. Kendall, and J. R. Woodward. **Automatic Heuristic Generation with Genetic Programming: Evolving a Jack-of-all-trades or a Master of One**. In D. Thierens et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2007*, pages 1559–1565, New York, NY, 2007. ACM Press. doi:10.1145/1276958.1277273.
- [381] E. K. Burke, M. R. Hyde, G. Kendall, and J. R. Woodward. **A Genetic Programming Hyper-Heuristic Approach for Evolving 2-D Strip Packing Heuristics**. *IEEE Transactions on Evolutionary Computation*, 14(6):942–958, 2010. doi:10.1109/TEVC.2010.2041061.
- [382] E. K. Burke, M. R. Hyde, and G. Kendall. **Grammatical Evolution of Local Search Heuristics**. *IEEE Transactions on Evolutionary Computation*, 16(7):406–417, 2012. doi:10.1109/TEVC.2011.2160401.
- [383] E. K. Burke, M. Gendreau, M. R. Hyde, G. Kendall, G. Ochoa, E. Özcan, and R. Qu. **Hyper-heuristics: A Survey of the State of the Art**. *Journal of the Operational Research Society*, 64(12):1695–1724, 2013.
- [384] E. K. Burke, M. R. Hyde, G. Kendall, G. Ochoa, E. Özcan, and J. R. Woodward. **A Classification of Hyper-Heuristic Approaches: Revisited**. In M. Gendreau and J.-Y. Potvin, editors, *Handbook of Metaheuristics*, volume 272 of *International Series in Operations Research & Management Science*, chapter 14, pages 453–477. Springer, 2019. doi:10.1007/978-3-319-91086-4\_14.
- [385] E. Buson, R. Roberti, and P. Toth. **A Reduced-Cost Iterated Local Search Heuristic for the Fixed-Charge Transportation Problem**. *Operations Research*, 62(5):1095–1106, 2014.
- [386] D. C. C. et al., editors. *Applications of Evolutionary Computation, EvoApplications 2012*, volume 7248 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2012.



- [387] R. Caballero, F. Ruiz, and R. Steuer, editors. *Advances in Multiple Objective and Goal Programming*, volume 455 of *Lecture Notes in Economics and Mathematical Systems*. Springer, Heidelberg, Germany, 1997.
- [388] R. Caballero, M. Luque, J. Molina, and F. Ruiz. **PROMOIN: An Interactive System for Multiobjective Programming**. *Information Technologies and Decision Making*, 1: 635–656, 2002.  
*Keywords:* preferences, multi interactive methods framework.
- [389] S. Cagnoni et al., editors. *Real-World Applications of Evolutionary Computing, EvoWorkshops 2000: EvoIASP, EvoSCONDI, EvoTel, EvoSTIM, EvoROB, and EvoFlight, Edinburgh, Scotland, UK, April 17, 2000, Proceedings*, volume 1803 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2000.
- [390] S. Cagnoni et al., editors. *Applications of Evolutionary Computing, Proceedings of EvoWorkshops 2002*, volume 2279 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2002.
- [391] S. Cagnoni et al., editors. *Applications of Evolutionary Computing, Proceedings of EvoWorkshops 2003*, volume 2611 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2003.
- [392] S. Cahon, N. Melab, and E.-G. Talbi. **ParadisEO: A Framework for the Reusable Design of Parallel and Distributed Metaheuristics**. *Journal of Heuristics*, 10(3): 357–380, 2004. doi:10.1023/B:HEUR.0000026900.92269.ec.
- [393] Z. Cai, H. Huang, Y. Qin, and X. Ma. **Ant Colony Optimization Based on Adaptive Volatility Rate of Pheromone Trail**. *International Journal of Communications, Network and System Sciences*, 2(8):792–796, 2009.
- [394] P. Calabar and T. C. Son, editors. *12th International Conference, LPNMR 2013, Corunna, Spain, September 15-19, 2013. Proceedings*, volume 8148 of *Lecture Notes in Artificial Intelligence*. Springer, Heidelberg, Germany, 2013.
- [395] C. L. Camacho-Villalón, M. Dorigo, and T. Stützle. **Why the Intelligent Water Drops Cannot Be Considered as a Novel Algorithm**. In M. Dorigo, M. Birattari, A. L. Christensen, A. Reina, and V. Trianni, editors, *Swarm Intelligence, 11th International Conference, ANTS 2018*, volume 11172 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2018.
- [396] C. L. Camacho-Villalón, M. Dorigo, and T. Stützle. **The intelligent water drops algorithm: why it cannot be considered a novel algorithm**. *Swarm Intelligence*, 13:173–192, 2019.
- [397] E. Cambria, B. Schuller, Y. Xia, and C. Havasi. **New avenues in opinion mining and sentiment analysis**. *IEEE Intelligent Systems*, 28(2):15–21, 2013. doi:10.1109/MIS.2013.30.
- [398] F. Campelo, A. R. Trindade, and M. López-Ibáñez. **Pseudoreplication in Racing Methods for Tuning Metaheuristics**. In preparation, 2017.
- [399] P. Campigotto and A. Passerini. **Adapting to a realistic decision maker: experiments towards a reactive multi-objective optimizer**. In C. Blum and

- R. Battiti, editors, *Learning and Intelligent Optimization, 4th International Conference, LION 4*, volume 6073 of *Lecture Notes in Computer Science*, pages 338–341. Springer, Heidelberg, Germany, 2010. doi:10.1007/978-3-642-13800-3.
- [400] E. Cantú-Paz. *Efficient and Accurate Parallel Genetic Algorithms*. Kluwer Academic Publishers, Boston, MA, 2000.
- [401] E. Cantú-Paz et al., editors. *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2003, Part I*, volume 2723 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2003.
- [402] Z. Cao, S. Jiang, J. Zhang, and H. Guo. **A unified framework for vehicle rerouting and traffic light control to reduce traffic congestion**. *IEEE Transactions on Intelligent Transportation Systems*, 18(7):1958–1973, 2017.
- [403] G. Caporossi. **Variable Neighborhood Search for extremal vertices : The AutoGraphX-III system**. *Computers & Operations Research*, 78:431 – 438, 2017.
- [404] P. Cardoso, M. Jesus, and A. Marquez. **MONACO: multi-objective network optimisation based on an ACO**. In *Proc. X Encuentros de Geometría Computacional*, Seville, Spain, 2003.
- [405] J. Carlier. **The One-machine Sequencing Problem**. *European Journal of Operational Research*, 11(1):42–47, 1982.
- [406] W. B. Carlton and J. W. Barnes. **Solving the traveling-salesman problem with time windows using tabu search**. *IIE Transactions*, 28:617–629, 1996.
- [407] R. Carnell. *lhs: Latin Hypercube Samples*, 2016. URL <http://r-forge.r-project.org/projects/lhs/>. R package version 0.14.
- [408] Y. Caseau and F. Laburthe. **Heuristics for large constrained vehicle routing problems**. *Journal of Heuristics*, 5(3):281–303, 1999.
- [409] Y. Caseau, G. Silverstein, and F. Laburthe. **Learning Hybrid Algorithms for Vehicle Routing Problems**. *Theory and Practice of Logic Programming*, 1(6):779–806, 2001.
- [410] M. Caserta and S. Voß, editors. *Proceedings of MIC 2009, the 8th Metaheuristics International Conference*, Hamburg, Germany, 2010. University of Hamburg.
- [411] D. Cattaruzza, N. Absi, D. Feillet, and D. Vigo. **An Iterated Local Search for the Multi-commodity Multi-trip Vehicle Routing Problem with Time Windows**. *Computers & Operations Research*, 51:257–267, 2014.
- [412] M. Cattolico et al., editors. *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2006*. ACM Press, New York, NY, 2006.
- [413] CCIE. *Proceedings of the 2010 International Conference on Computing, Control and Industrial Engineering*, Los Alamitos, CA, 2010. IEEE Computer Society Press.
- [414] E. Çela. *The Quadratic Assignment Problem: Theory and Algorithms*. Kluwer Academic Publishers, Dordrecht, The Netherlands, 1998.

- [415] S. Ceschia and A. Schaerf. **Modeling and solving the dynamic patient admission scheduling problem under uncertainty.** *Artificial Intelligence in Medicine*, 56(3): 199–205, 2012. doi:10.1016/j.artmed.2012.09.001.  
*Keywords:* F-race.
- [416] S. Ceschia, L. Di Gaspero, and A. Schaerf. **Design, Engineering, and Experimental Analysis of a Simulated Annealing Approach to the Post-Enrolment Course Timetabling Problem.** *Computers & Operations Research*, 39(7):1615–1624, 2012.
- [417] S. Ceschia, A. Schaerf, and T. Stützle. **Local Search Techniques for a Routing-packing Problem.** *Computers and Industrial Engineering*, 66(4):1138–1149, 2013.
- [418] A. Cesta, A. Oddi, and S. F. Smith. **Iterative Flattening: A Scalable Method for Solving Multi-Capacity Scheduling Problems.** In H. A. Kautz and B. W. Porter, editors, *Proceedings of AAAI 2000 – Seventeenth National Conference on Artificial Intelligence*, pages 742–747. AAAI Press/MIT Press, Menlo Park, CA, 2000.
- [419] U. K. Chakraborty, editor. *Advances in differential evolution*. Springer, Heidelberg, Germany, 2008.
- [420] S. Chand and M. Wagner. **Evolutionary many-objective optimization: A quick-start guide.** *Surveys in Operations Research and Management Science*, 20(2): 35–42, 2015. doi:10.1016/j.sorms.2015.08.001.
- [421] S. T. H. Chang. **Optimizing the Real Time Operation of a Pumping Station at a Water Filtration Plant using Genetic Algorithms.** Honors thesis, Department of Civil and Environmental Engineering, The University of Adelaide, 1999.
- [422] D. V. Chase and L. E. Ormsbee. **Optimal pump operation of water distribution systems with multiple storage tanks.** In *Proceedings of American Water Works Association Computer Specialty Conference*, pages 205–214, Denver, USA, 1989. AWWA.
- [423] D. V. Chase and L. E. Ormsbee. **An alternate formulation of time as a decision variable to facilitate real-time operation of water supply systems.** In *Proceedings of the 18th Annual Conference of Water Resources Planning and Management*, pages 923–927, New York, USA, 1991. ASCE.
- [424] D. V. Chase and L. E. Ormsbee. **Computer-generated pumping schedules for satisfying operation objectives.** *J. Am. Water Works Assoc.*, 85(7):54–61, 1993.
- [425] S. Chaudhuri and K. Deb. **An interactive evolutionary multi-objective optimization and decision making procedure.** *Applied Soft Computing*, 10(2): 496–511, 2010.
- [426] R. Chelouah and P. Siarry. **Tabu search applied to global optimization.** *European Journal of Operational Research*, 123(2):256–270, 2000.
- [427] F. Chen, Y. Gao, Z.-q. Chen, and S.-f. Chen. **SCGA: Controlling genetic algorithms with Sarsa(0).** In *Computational Intelligence for Modelling, Control and Automation, 2005 and International Conference on Intelligent Agents, Web Technologies and Internet Commerce, International Conference on*, volume 1, pages 1177–1183. IEEE, 2005. doi:10.1109/CIMCA.2005.1631422.

- [428] H. Chen, R. H. Chiang, and V. C. Storey. **Business Intelligence and Analytics: From Big Data to Big Impact**. *MIS quarterly*, 36(4):1165–1188, 2012.
- [429] H. Chen, R. H. L. Chiang, and V. C. Storey. **Business Intelligence and Analytics: From Big Data to Big Impact**. *MIS quarterly*, 36(4):1165–1188, 2012.
- [430] L. Chen, X. H. Xu, and Y. X. Chen. **An adaptive ant colony clustering algorithm**. In I. Cloete, K.-P. Wong, and M. Berthold, editors, *Proceedings of the International Conference on Machine Learning and Cybernetics*, pages 1387–1392. IEEE Press, 2004.
- [431] R.-M. Chen and F.-R. Hsieh. **An exchange local search heuristic based scheme for permutation flow shop problems**. *Applied Mathematics & Information Sciences*, 8(1):209–215, 2014.
- [432] X. Chen and A. Stafylopatis, editors. *Computational Intelligence (SSCI), 2016 IEEE Symposium Series on*, 2016.
- [433] Y. Chen, J.-K. Hao, and F. Glover. **A hybrid metaheuristic approach for the capacitated arc routing problem**. *European Journal of Operational Research*, 553(1): 25–39, 2016. doi:10.1016/j.ejor.2016.02.015.  
*Keywords:* irace.
- [434] C.-B. Cheng and C.-P. Mao. **A modified ant colony system for solving the travelling salesman problem with time windows**. *Mathematical and Computer Modelling*, 46:1225–1235, 2007. doi:10.1016/j.mcm.2006.11.035.
- [435] F. Y. Cheng and X. S. Li. **Generalized center method for multiobjective engineering optimization**. *Engineering Optimization*, 31(5):641–661, 1999. doi:10.1080/03052159908941390.
- [436] C. Chevalier, D. Ginsbourger, J. Bect, and I. Molchanov. **Estimating and Quantifying Uncertainties on Level Sets Using the Vorob’ev Expectation and Deviation with Gaussian Process Models**. In D. Ucinski, A. C. Atkinson, and M. Patan, editors, *mODa 10—Advances in Model-Oriented Design and Analysis*, pages 35–43. Springer International Publishing, Heidelberg, 2013. doi:10.1007/978-3-319-00218-7\_5.
- [437] T.-C. Chiang. **nsga3cpp: A C++ implementation of NSGA-III**. <http://web.ntnu.edu.tw/~tcchiang/publications/nsga3cpp/nsga3cpp.htm>, 2014.
- [438] M. Chiarandini. *Stochastic Local Search Methods for Highly Constrained Combinatorial Optimisation Problems*. PhD thesis, FB Informatik, TU Darmstadt, Germany, 2005.
- [439] M. Chiarandini and Y. Goegebeur. **Mixed Models for the Analysis of Optimization Algorithms**. In T. Bartz-Beielstein, M. Chiarandini, L. Paquete, and M. Preuss, editors, *Experimental Methods for the Analysis of Optimization Algorithms*, pages 225–264. Springer, Berlin, Germany, 2010. doi:10.1007/978-3-642-02538-9.  
*Annotation:* Preliminary version available as *Tech. Rep.* MF-2009-07-001 at the The Danish Mathematical Society.
- [440] M. Chiarandini, M. Birattari, K. Socha, and O. Rossi-Doria. **An Effective Hybrid Algorithm for University Course Timetabling**. *Journal of Scheduling*, 9(5):403–432, Oct. 2006. doi:10.1007/s10951-006-8495-8.  
*Keywords:* 2003 international timetabling competition, F-race.

- [441] M. Chica, O. Cordon, S. Damas, and J. Bautista. **A New Diversity Induction Mechanism for a Multi-objective Ant Colony Algorithm to Solve a Real-world time and Space Assembly Line Balancing Problem.** *Memetic Computing*, 3(1): 15–24, 2011. ISSN 1865-9284.
- [442] F. Chicano, D. Whitley, and E. Alba. **A Methodology to Find the Elementary Landscape Decomposition of Combinatorial Optimization Problems.** *Evolutionary Computation*, 19(4):597–637, 2011.
- [443] F. Chicano, G. J. Luque, and E. Alba. **Autocorrelation Measures for the Quadratic Assignment Problem.** *Applied Mathematics Letters*, 25:698–705, 2012. [doi:10.1016/j.aml.2011.09.053](https://doi.org/10.1016/j.aml.2011.09.053).
- [444] S. E. Chick, P. J. Sanchez, D. M. Ferrin, and D. J. Morrice, editors. *Proceedings of the 35th Winter Simulation Conference: Driving Innovation*, volume 1, New York, NY, Dec. 2003. ACM Press.
- [445] C. D. Chio, S. Cagnoni, C. Cotta, M. Ebner, A. Ekárt, A. I. Esparcia-Alcázar, C. K. Goh, J.-J. Merelo, F. Neri, M. Preuss, J. Togelius, and G. N. Yannakakis, editors. *Applications of Evolutionary Computation, EvoApplications 2010: EvoCOMPLEX, EvoGAMES, EvoIASP, EvoINTELLIGENCE, EvoNUM, and EvoSTOC, Istanbul, Turkey, April 7-9, 2010, Proceedings, Part I*, volume 6024 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2010.
- [446] D. S. Chivilikhin, V. I. Ulyantsev, and A. A. Shalyto. **Modified ant colony algorithm for constructing finite state machines from execution scenarios and temporal formulas.** *Automation and Remote Control*, 77(3):473–484, 2016. [doi:10.1134/S0005117916030097](https://doi.org/10.1134/S0005117916030097).  
*Keywords:* irace.
- [447] M. Christen, O. Schenk, and H. Burkhart. **PATUS: A Code Generation and Autotuning Framework for Parallel Iterative Stencil Computations on Modern Microarchitectures.** In F. Mueller, editor, *Proceedings of the 2011 IEEE International Parallel & Distributed Processing Symposium, IPDPS '11*, pages 676–687. IEEE Computer Society, 2011. [doi:10.1109/IPDPS.2011.70](https://doi.org/10.1109/IPDPS.2011.70).
- [448] J. Christiaens and G. V. Berghe. **Slack Induction by String Removals for Vehicle Routing Problems.** Technical Report 7-05-2018, Department of Computing Science, KU Leuven, Gent, Belgium, 2018.
- [449] N. Christofides, A. Mingozzi, and P. Toth. **State-space relaxation procedures for the computation of bounds to routing problems.** *Networks*, 11(2):145–164, 1981. [doi:10.1002/net.3230110207](https://doi.org/10.1002/net.3230110207).
- [450] T. Chugh. *Handling expensive multiobjective optimization problems with evolutionary algorithms.* PhD thesis, University of Jyväskylä, 2017.
- [451] T. Chugh, K. Sindhya, J. Hakanen, and K. Miettinen. **A survey on handling computationally expensive multiobjective optimization problems with evolutionary algorithms.** *Soft Computing*, 23(9):3137–3166, 2019. [doi:10.1007/s00500-017-2965-0](https://doi.org/10.1007/s00500-017-2965-0).

- [452] S. Chusanapiputt, D. Nualhong, S. Jantarang, and S. Phoomvuthisarn. **Selective self-adaptive approach to ant system for solving unit commitment problem.** In M. Cattolico et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2006*, pages 1729–1736. ACM Press, New York, NY, 2006.
- [453] J. Cirasella, D. S. Johnson, L. A. McGeoch, and W. Zhang. **The Asymmetric Traveling Salesman Problem: Algorithms, Instance Generators, and Tests.** In A. L. Buchsbaum and J. Snoeyink, editors, *Algorithm Engineering and Experimentation, Third International Workshop, ALENEX 2001, Washington, DC, USA, January 5-6, 2001, Revised Papers*, volume 2153 of *Lecture Notes in Computer Science*, pages 32–59, Heidelberg, Germany, 2001. Springer. doi:10.1007/3-540-44808-X\_3.
- [454] R. M. Clark, L. A. Rossman, and L. J. Wymer. **Modeling distribution system water quality: regulatory implications.** *Journal of Water Resources Planning and Management, ASCE*, 121(6):423–428, 1995.
- [455] M. Clerc and J. Kennedy. **Standard PSO 2011.** Particle Swarm Central, 2011. URL <http://www.particleswarm.info/>.
- [456] D. Cliff, P. Husbands, J.-A. Meyer, and S. Wilson, editors. *Proceedings of the third international conference on Simulation of adaptive behavior: From Animals to Animats 3.* MIT Press, Cambridge, MA, 1994.
- [457] J. Climaco, editor. *Proceedings of the 13th International Conference on Multiple Criteria Decision Making (MCDM'97).* Springer Verlag, 1997.
- [458] I. Cloete, K.-P. Wong, and M. Berthold, editors. *Proceedings of the 3rd International Conference on Machine Learning and Cybernetics*, 2004. IEEE Press.
- [459] J. J. Cochran, editor. *Wiley Encyclopedia of Operations Research and Management Science.* John Wiley & Sons, 2011. doi:10.1002/9780470400531.
- [460] B. Codenotti, G. Manzini, L. Margara, and G. Resta. **Perturbation: An Efficient Technique for the Solution of Very Large Instances of the Euclidean TSP.** *INFORMS Journal on Computing*, 8(2):125–133, 1996.
- [461] H. Coelho, R. Studer, and M. Wooldridge, editors. *Proceedings of the 19th European Conference on Artificial Intelligence.* IOS Press, 2010.
- [462] C. A. Coello Coello. **Handling preferences in evolutionary multiobjective optimization: A survey.** In *Proceedings of the 2000 Congress on Evolutionary Computation (CEC'00)*, pages 30–37. IEEE Press, Piscataway, NJ, July 2000.
- [463] C. A. Coello Coello. **Handling Preferences in Evolutionary Multiobjective Optimization: A Survey.** In *Proceedings of the 2000 Congress on Evolutionary Computation (CEC'00)*, pages 30–37. IEEE Press, Piscataway, NJ, July 2000.
- [464] C. A. Coello Coello. **Theoretical and numerical constraint-handling techniques used with evolutionary algorithms: a survey of the state of the art.** *Computer Methods in Applied Mechanics and Engineering*, 191(11-12):1245–1287, 2002. doi:10.1016/S0045-7825(01)00323-1.
- [465] C. A. Coello Coello. **Special Issue on Evolutionary Multiobjective Optimization.** *IEEE Transactions on Evolutionary Computation*, 7(2), 2003.



- [466] C. A. Coello Coello. **Evolutionary multi-objective optimization: a historical view of the field.** *IEEE Computational Intelligence Magazine*, 1(1):28–36, 2006.
- [467] C. A. Coello Coello, editor. *5th International Conference, LION 5, Rome, Italy, January 17-21, 2011. Selected Papers*, volume 6683 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2011.
- [468] C. A. Coello Coello. **Multi-objective Evolutionary Algorithms in Real-World Applications: Some Recent Results and Current Challenges.** In *Advances in Evolutionary and Deterministic Methods for Design, Optimization and Control in Engineering and Sciences*, pages 3–18. Springer, 2015. doi:10.1007/978-3-319-11541-2\_1.
- [469] C. A. Coello Coello. **Recent Results and Open Problems in Evolutionary Multiobjective Optimization.** In C. Martín-Vide, R. Neruda, and M. A. Vega-Rodríguez, editors, *Theory and Practice of Natural Computing - 6th International Conference, TPNC 2017*, volume 10687 of *Lecture Notes in Computer Science*, pages 3–21. Springer International Publishing, Cham, Switzerland, 2017.
- [470] C. A. Coello Coello and M. Reyes-Sierra. **A Study of the Parallelization of a Coevolutionary Multi-objective Evolutionary Algorithm.** In R. Monroy, G. Arroyo-Figueroa, L. E. Sucar, and H. Sossa, editors, *Proceedings of MICAI*, volume 2972 of *Lecture Notes in Artificial Intelligence*, pages 688–697. Springer, Heidelberg, Germany, 2004.  
Keywords: IGD.  
Annotation: Introduces Inverted Generational Distance (IGD).
- [471] C. A. Coello Coello, A. H. Aguirre, and E. Zitzler, editors. *Evolutionary Multi-criterion Optimization, EMO 2005*, volume 3410 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2005.
- [472] C. A. Coello Coello, G. B. Lamont, and D. A. Van Veldhuizen. *Evolutionary Algorithms for Solving Multi-Objective Problems*. Springer, New York, NY, 2007.
- [473] C. A. Coello Coello, C. Dhaenens, and L. Jourdan, editors. *Advances in Multi-Objective Nature Inspired Computing*, volume 272 of *Studies in Computational Intelligence*. Springer, 2010.
- [474] C. A. Coello Coello et al., editors. *Parallel Problem Solving from Nature, PPSN XII, 12th International Conference, Taormina, Italy, September 1-5, 2012, Proceedings, Part I*, volume 7491 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2012.
- [475] C. A. Coello Coello et al., editors. *Parallel Problem Solving from Nature, PPSN XII*, volume 7492 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2012.
- [476] G. Cohen. **Optimal Control of Water Supply Networks.** In S. G. Tzafestas, editor, *Optimization and Control of Dynamic Operational Research Models*, volume 4, chapter 8, pages 251–276. North-Holland Publishing Company, Amsterdam, 1982.
- [477] P. R. Cohen. *Empirical Methods for Artificial Intelligence*. MIT Press, Cambridge, MA, 1995.

- [478] W. W. Cohen and H. Hirsh, editors. *Proceedings of the 11th International Conference on Machine Learning, ICML 1994, New Brunswick, NJ, USA*, San Francisco, CA, 1994. Morgan Kaufmann Publishers.
- [479] W. W. Cohen, A. McCallum, and S. T. Roweis, editors. *Proceedings of the 25th International Conference on Machine Learning, ICML 2008, Helsinki, Finland, July 05-09, 2008*, 2008. ACM Press, New York, NY.
- [480] H. Cohn and M. J. Fielding. **Simulated Annealing: Searching for an Optimal Temperature**. *SIAM Journal on Optimization*, 9(3):779–802, 1999.
- [481] S. Colas, N. Monmarché, P. Gaucher, and M. Slimane. **Artificial Ants for the Optimization of Virtual Keyboard Arrangement for Disabled People**. In N. Monmarché, E.-G. Talbi, P. Collet, M. Schoenauer, and E. Lutton, editors, *Artificial Evolution*, volume 4926 of *Lecture Notes in Computer Science*, pages 87–99. Springer, Heidelberg, Germany, 2008. doi:10.1007/978-3-540-79305-2.
- [482] P. Collet, N. Monmarché, P. Legrand, M. Schoenauer, and E. Lutton, editors. *Artificial Evolution: 9th International Conference, Evolution Artificielle, EA, 2009, Strasbourg, France, October 26-28, 2009. Revised Selected Papers*, volume 5975 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2010.
- [483] A. F. Colombo and B. W. Karney. **Impacts of Leaks on Energy Consumption in Pumped Systems with Storage**. *Journal of Water Resources Planning and Management, ASCE*, 131(2):146–155, Mar. 2005.
- [484] A. Colorni, M. Dorigo, and V. Maniezzo. **Distributed Optimization by Ant Colonies**. In F. J. Varela and P. Bourguine, editors, *Proceedings of the First European Conference on Artificial Life*, pages 134–142. MIT Press, Cambridge, MA, 1992.
- [485] A. Colorni, M. Dorigo, V. Maniezzo, and M. Trubian. **Ant System for Job-shop Scheduling**. *JORBEL — Belgian Journal of Operations Research, Statistics and Computer Science*, 34(1):39–53, 1994.
- [486] R. K. Congram, C. N. Potts, and S. van de Velde. **An Iterated Dynasearch Algorithm for the Single-Machine Total Weighted Tardiness Scheduling Problem**. *INFORMS Journal on Computing*, 14(1):52–67, 2002.
- [487] A. R. Conn, K. Scheinberg, and L. N. Vicente. *Introduction to Derivative-Free Optimization*. MPS–SIAM Series on Optimization. Society for Industrial and Applied Mathematics, Philadelphia, PA, USA, 2009.
- [488] D. T. Connolly. **An Improved Annealing Scheme for the QAP**. *European Journal of Operational Research*, 46(1):93–100, 1990.
- [489] W. J. Conover. *Practical Nonparametric Statistics*. John Wiley & Sons, New York, NY, third edition, 1999.
- [490] R. J. Cook and V. T. Farewell. **Multiplicity Considerations in the Design and Analysis of Clinical Trials**. *Journal of the Royal Statistical Society Series A*, 159: 93–110, 1996.  
*Annotation:* multiplicity; multiple endpoints; multiple treatments; p-value adjustment; type I error; argues that if results are intended to be interpreted marginally, there may be no need for controlling experimentwise error rate.

- [491] S. A. Cook. **The Complexity of Theorem-proving Procedures**. In *Proceedings of the Third Annual ACM Symposium on Theory of Computing*, STOC '71, pages 151–158. ACM, 1971. doi:10.1145/800157.805047.
- [492] W. J. Cook. **The Traveling Salesman Problem**. <http://www.math.uwaterloo.ca/tsp>, 2010. Version visited last on 15 April 2014.
- [493] W. J. Cook. *In Pursuit of the Traveling Salesman*. Princeton University Press, Princeton, NJ, 2012.
- [494] J. Cordeau and M. Maischberger. **A Parallel Iterated Tabu Search Heuristic for Vehicle Routing Problems**. *Computers & Operations Research*, 39(9):2033–2050, 2012.
- [495] J. Cordeau, G. Laporte, and A. Mercier. **A unified tabu search heuristic for vehicle routing problems with time windows**. *Journal of the Operational Research Society*, 52(8):928–936, 2001.
- [496] O. Cordón and S. Damas. **Image Registration with Iterated Local Search**. *Journal of Heuristics*, 12(1–2):73–94, 2006.
- [497] O. Cordón, I. F. de Viana, F. Herrera, and L. Moreno. **A New ACO Model Integrating Evolutionary Computation Concepts: The Best-Worst Ant System**. In M. Dorigo et al., editors, *Abstract proceedings of ANTS 2000 – From Ant Colonies to Artificial Ants: Second International Workshop on Ant Algorithms*, pages 22–29. IRIDIA, Université Libre de Bruxelles, Belgium, Sept., 7–9 2000.
- [498] O. Cordón, F. Herrera, and T. Stützle. **Special Issue on Ant Colony Optimization: Models and Applications**. *Mathware & Soft Computing*, 9(3):137–268, 2002.
- [499] D. Corne and J. D. Knowles. **Some Multiobjective Optimizers are Better than Others**. In *Proceedings of the 2003 Congress on Evolutionary Computation (CEC 2003)*, volume 4, pages 2506–2512. IEEE Press, Piscataway, NJ, Dec. 2003.
- [500] D. Corne and J. D. Knowles. **No free lunch and free leftovers theorems for multiobjective optimisation problems**. In C. M. Fonseca, P. J. Fleming, E. Zitzler, K. Deb, and L. Thiele, editors, *Evolutionary Multi-criterion Optimization, EMO 2003*, volume 2632 of *Lecture Notes in Computer Science*, pages 327–341. Springer, Heidelberg, Germany, 2003. doi:10.1007/3-540-36970-8\_23.
- [501] D. Corne and A. Reynolds. **Evaluating optimization algorithms: bounds on the performance of optimizers on unseen problems**. In N. Krasnogor and P. L. Lanzi, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2011*, pages 707–710, New York, NY, 2011. ACM Press. doi:10.1145/2001858.2002073.
- [502] D. Corne, M. Dorigo, and F. Glover, editors. *New Ideas in Optimization*. McGraw Hill, London, UK, 1999.
- [503] D. Corne, J. D. Knowles, and M. J. Oates. **The Pareto Envelope-Based Selection Algorithm for Multiobjective Optimization**. In M. Schoenauer et al., editors, *Proceedings of PPSN-VI, Sixth International Conference on Parallel Problem Solving from Nature*, volume 1917 of *Lecture Notes in Computer Science*, pages 839–848. Springer, Heidelberg, Germany, 2000.

- [504] D. Corne, N. R. Jerram, J. D. Knowles, and M. J. Oates. **PESA-II: Region-Based Selection in Evolutionary Multiobjective Optimization**. In E. D. Goodman, editor, *Proceedings of the 3rd Annual Conference on Genetic and Evolutionary Computation, GECCO 2001*, pages 283–290. Morgan Kaufmann Publishers, San Francisco, CA, 2001. doi:[10.5555/2955239.2955289](https://doi.org/10.5555/2955239.2955289).  
Keywords: PESA-II.
- [505] P. Corry and E. Kozan. **Ant Colony Optimisation for Machine Layout Problems**. *Computational Optimization and Applications*, 28(3):287–310, 2004.
- [506] J. Corstjens, N. Dang, B. Depaire, A. Caris, and P. De Causmaecker. **A combined approach for analysing heuristic algorithms**. *Journal of Heuristics*, 25(4):591–628, 2019. doi:[10.1007/s10732-018-9388-7](https://doi.org/10.1007/s10732-018-9388-7).
- [507] J. Corstjens, B. Depaire, A. Caris, and K. Sörensen. **A multilevel evaluation method for heuristics with an application to the VRPTW**. *International Transactions in Operational Research*, 27(1):168–196, 2020. doi:[10.1111/itor.12631](https://doi.org/10.1111/itor.12631).
- [508] A. D. Corte and K. Sörensen. **Optimisation of gravity-fed water distribution network design: A critical review**. *European Journal of Operational Research*, 228(1):1–10, 2013. doi:[10.1016/j.ejor.2012.11.046](https://doi.org/10.1016/j.ejor.2012.11.046).
- [509] A. D. Corte and K. Sörensen. **An Iterated Local Search Algorithm for Water Distribution Network Design Optimization**. *Networks*, 67(3):187–198, 2016.
- [510] A. D. Corte and K. Sörensen. **An Iterated Local Search Algorithm for multi-period water distribution network design optimization**. *Water*, 8(8):359, 2016. doi:[10.3390/w8080359](https://doi.org/10.3390/w8080359).
- [511] C. Cortes, N. D. Lawrence, D. D. Lee, M. Sugiyama, and R. Garnett, editors. *Advances in Neural Information Processing Systems 28: Annual Conference on Neural Information Processing Systems 2015, December 7-12, 2015, Montreal, Quebec, Canada*, 2015. URL <http://papers.nips.cc/book/advances-in-neural-information-processing-systems-28-2015>.
- [512] COSEAL. **COnfiguration and SElection of ALgorithms**. <http://www.coseal.net>, 2017.
- [513] D. Costa and A. Hertz. **Ants can color graphs**. *Journal of the Operational Research Society*, 48:295–305, 1997.
- [514] W. E. Costa, M. C. Goldberg, and E. F. G. Goldberg. **Hybridizing VNS and path-relinking on a particle swarm framework to minimize total flowtime**. *Expert Systems with Applications*, 39(18):13118–13126, 2012.
- [515] C. Cotta and P. Cowling, editors. *Proceedings of EvoCOP 2009 – 9th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 5482 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2009.
- [516] C. Cotta et al., editors. *Proceedings of EvoCOP 2007 – Seventh European Conference on Evolutionary Computation in Combinatorial Optimisation*, volume 4446 of *Lecture Notes in Computer Science*. Springer, Berlin, 2007.

- [517] J. D. Cowan, G. Tesauro, and J. Alspector, editors. *Advances in Neural Information Processing Systems*, volume 6. Morgan Kaufmann Publishers, San Francisco, CA, 1994.
- [518] S. P. Coy, B. L. Golden, G. C. Runger, and E. A. Wasil. **Using Experimental Design to Find Effective Parameter Settings for Heuristics**. *Journal of Heuristics*, 7(1): 77–97, 2001.
- [519] I. B. Crabtree. **Resource Scheduling: Comparing Simulated Annealing with Constraint Programming**. *BT Technology Journal*, 13(1):121–127, 1995.
- [520] M. J. Crawley. *The R Book*. Wiley, second edition, 2012.
- [521] G. A. Croes. **A Method for Solving Traveling Salesman Problems**. *Operations Research*, 6:791–812, 1958.
- [522] W. B. Crowston, F. Glover, G. L. Thompson, and J. D. Trawick. **Probabilistic and Parametric Learning Combinations of Local Job Shop Scheduling Rules**. ONR Research Memorandum No. 117, GSIA, Carnegie-Mellon University, Pittsburgh, PA, USA, 1963.
- [523] C. Cruz, J. R. González, and D. A. Pelta. **Optimization in Dynamic Environments: A Survey on Problems, Methods and Measures**. *Soft Computing*, 15(7):1427–1448, 2011.
- [524] F. Cruz, A. Subramanian, B. P. Bruck, and M. Iori. **A Heuristic Algorithm for a Single Vehicle Static Bike Sharing Rebalancing Problem**. *Computers & Operations Research*, 79:19–33, 2017.
- [525] J. C. Culberson. **Iterated Greedy Graph Coloring and the Difficulty Landscape**. Technical Report 92-07, Department of Computing Science, The University of Alberta, Edmonton, Alberta, Canada, 1992.
- [526] J. C. Culberson. **On the Futility of Blind Search: An Algorithmic View of “No Free Lunch”**. *Evolutionary Computation*, 6(2):109–127, 1998. doi:10.1162/evco.1998.6.2.109.  
*Keywords*: NFL.
- [527] J. C. Culberson and F. Luo. **Exploring the  $k$ -colorable Landscape with Iterated Greedy**. In D. S. Johnson and M. A. Trick, editors, *Cliques, Coloring, and Satisfiability: Second DIMACS Implementation Challenge*, volume 26 of *DIMACS Series on Discrete Mathematics and Theoretical Computer Science*, pages 245–284. American Mathematical Society, Providence, RI, 1996.
- [528] J. C. Culberson, A. Beacham, and D. Papp. **Hiding our Colors**. In *Proceedings of the CP’95 Workshop on Studying and Solving Really Hard Problems*, pages 31–42, Cassis, France, Sept. 1995.
- [529] P. Czyżżak and A. Jaskiewicz. **Pareto simulated annealing – a metaheuristic technique for multiple-objective combinatorial optimization**. *Journal of Multi-Criteria Decision Analysis*, 7(1):34–47, 1998.
- [530] M. Damas, M. Salmerón, J. Ortega, G. Olivares, and H. Pomares. **Parallel Dynamic Water Supply Scheduling in a Cluster of Computers**. *Concurrency and Computation: Practice and Experience*, 13(15):1281–1302, Dec. 2001. ISSN 1532-0626 (print), 1532-0634 (electronic).

- [531] S. B. Damelin, F. J. Hickernell, D. L. Ragozin, and X. Zeng. **On Energy, Discrepancy and Group Invariant Measures on Measurable Subsets of Euclidean Space.** *Journal of Fourier Analysis and Applications*, 16(6):813–839, 2010.  
*Keywords:* Capacity; Cubature; Discrepancy; Distribution; Group invariant kernel; Group invariant measure; Energy minimizer; Equilibrium measure; Numerical integration; Positive definite; Potential field; Riesz kernel; Reproducing Hilbert space; Signed measure.
- [532] G. C. Dandy and M. S. Gibbs. **Optimizing System Operations and Water Quality.** In P. Bizier and P. DeBarry, editors, *Proceedings of World Water and Environmental Resources Congress*. ASCE, Philadelphia, USA, 2003. doi:[10.1061/40685\(2003\)127](https://doi.org/10.1061/40685(2003)127). on CD-ROM.
- [533] N. Dang and C. Doerr. **Hyper-parameter tuning for the  $(1 + (\lambda, \lambda))$  GA.** In M. López-Ibáñez, A. Auger, and T. Stützle, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2019*, pages 889–897. ACM Press, New York, NY, 2019. ISBN 978-1-4503-6111-8. doi:[10.1145/3321707.3321725](https://doi.org/10.1145/3321707.3321725).  
*Keywords:* irace; theory.
- [534] N. Dang Thi Thanh. *Data analytics for algorithm design*. PhD thesis, KU Leuven, Belgium, 2018.  
*Annotation:* Supervised by Patrick De Causmaecker.
- [535] N. Dang Thi Thanh and P. De Causmaecker. **Motivations for the Development of a Multi-objective Algorithm Configurator.** In B. Vitoriano, E. Pinson, and F. Valente, editors, *ICORES 2014 - Proceedings of the 3rd International Conference on Operations Research and Enterprise Systems*, pages 328–333. SciTePress, 2014.
- [536] N. Dang Thi Thanh, L. Pérez Cáceres, P. De Causmaecker, and T. Stützle. **Configuring irace using surrogate configuration benchmarks.** In P. A. N. Bosman, editor, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2017*, pages 243–250. ACM Press, New York, NY, 2017.  
*Keywords:* irace.
- [537] A. Dantas and A. Pozo. **On the use of fitness landscape features in meta-learning based algorithm selection for the quadratic assignment problem.** *Theoretical Computer Science*, 805:62–75, 2020. doi:[10.1016/j.tcs.2019.10.033](https://doi.org/10.1016/j.tcs.2019.10.033).
- [538] G. B. Dantzig and P. Wolfe. **Decomposition Principle for Linear Programs.** *Operations Research*, 8(1):101–111, 1960.
- [539] A. P. Danyluk, L. Bottou, and M. L. Littman, editors. *Proceedings of the 26th Annual International Conference on Machine Learning, ICML 2009, Montreal, Quebec, Canada, June 14-18, 2009*, 2009. ACM Press, New York, NY.
- [540] F. Daolio, S. Verel, G. Ochoa, and M. Tomassini. **Local Optima Networks and the Performance of Iterated Local Search.** In T. Soule and J. H. Moore, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2012*, pages 369–376. ACM Press, New York, NY, 2012.
- [541] I. Das and J. E. Dennis. **A closer look at drawbacks of minimizing weighted sums of objectives for Pareto set generation in multicriteria optimization problems.** *Structural Optimization*, 14(1):63–69, 1997. doi:[10.1007/BF01197559](https://doi.org/10.1007/BF01197559).



- [542] S. Das and P. N. Suganthan. **Differential Evolution: A Survey of the State-of-the-art**. *IEEE Transactions on Evolutionary Computation*, 15(1), Feb. 2011.
- [543] S. Das, S. S. Mullick, and P. N. Suganthan. **Recent advances in differential evolution—An updated survey**. *Swarm and Evolutionary Computation*, 27:1–30, 2016.
- [544] S. Dash. **Exponential Lower Bounds on the Lengths of Some Classes of Branch-and-Cut Proofs**. *Mathematics of Operations Research*, 30(3):678–700, 2005.
- [545] J. Daunizeau, H. E. M. den Ouden, M. Pessiglione, S. J. Kiebel, K. J. Friston, and K. E. Stephan. **Observing the observer (II): deciding when to decide**. *PLoS One*, 5(12):e15555, 2010. doi:10.1371/journal.pone.0015555.
- [546] J. Daunizeau, H. E. M. den Ouden, M. Pessiglione, K. E. Stephan, S. J. Kiebel, and K. J. Friston. **Observing the observer (I): meta-Bayesian models of learning and decision-making**. *PLoS One*, 5(12):e15554, 2010. doi:10.1371/journal.pone.0015554.
- [547] K. A. De Jong. *Evolutionary computation: a unified approach*. MIT press, Cambridge, 2006.
- [548] K. A. De Jong and W. M. Spears. **A formal analysis of the role of multi-point crossover in genetic algorithms**. *Annals of Mathematics and Artificial Intelligence*, 5(1):1–26, 1992.
- [549] E. B. de Moraes Barbosa, E. L. F. Senne, and M. B. Silva. **Improving the Performance of Metaheuristics: An Approach Combining Response Surface Methodology and Racing Algorithms**. *International Journal of Engineering Mathematics*, 2015: Article ID 167031, 2015. doi:10.1155/2015/167031.  
*Keywords:* F-race.
- [550] A. de Perthuis de Laillevault, B. Doerr, and C. Doerr. **Money for Nothing: Speeding Up Evolutionary Algorithms Through Better Initialization**. In S. Silva and A. I. Esparcia-Alcázar, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2015*, pages 815–822. ACM Press, New York, NY, 2015.
- [551] A. G. C. de Sá, W. J. G. S. Pinto, L. O. V. B. Oliveira, and G. L. Pappa. **RECIPE: A Grammar-Based Framework for Automatically Evolving Classification Pipelines**. In J. McDermott, M. Castelli, L. Sekanina, E. Haasdijk, and P. García-Sánchez, editors, *Proceedings of the 20th European Conference on Genetic Programming, EuroGP 2017*, volume 10196 of *Lecture Notes in Computer Science*, pages 246–261. Springer, Heidelberg, Germany, 2017. ISBN 978-3-319-55695-6. doi:10.1007/978-3-319-55696-3\_16.
- [552] W. de Schaetzen, D. A. Savic, and G. A. Walters. **A genetic algorithm approach to pump scheduling in water supply**. In V. Babovic and L. C. Larsen, editors, *Hydroinformatics '98*, pages 897–899, Rotterdam, Balkema, 1998.
- [553] M. De Souza and M. Ritt. **An Automatically Designed Recombination Heuristic for the Test-Assignment Problem**. In *2018 IEEE Congress on Evolutionary Computation (CEC)*, pages 1–8. IEEE, 2018.

- [554] M. De Souza and M. Ritt. **Automatic Grammar-Based Design of Heuristic Algorithms for Unconstrained Binary Quadratic Programming**. In *Evolutionary Computation in Combinatorial Optimization*, pages 67–84. Springer International Publishing, 2018.
- [555] A. Dean and D. Voss. *Design and Analysis of Experiments*. Springer, London, UK, 1999. doi:10.1007/b97673.
- [556] T. Dean and M. S. Boddy. **An Analysis of Time-Dependent Planning**. In H. E. Shrobe, T. M. Mitchell, and R. G. Smith, editors, *Proceedings of the 7th National Conference on Artificial Intelligence, AAAI-88*, pages 49–54. AAAI Press/MIT Press, Menlo Park, CA, 1988. URL <http://www.aaai.org/Conferences/AAAI/aaai88.php>.  
*Keywords:* anytime, performance profiles.
- [557] K. Deb. **Multi-objective genetic algorithms: problem difficulties and construction of test problems**. *Evolutionary Computation*, 7(3):205–230, 1999.  
*Annotation:* Naive definition of PLO-set.
- [558] K. Deb. **An efficient constraint handling method for genetic algorithms**. *Computer Methods in Applied Mechanics and Engineering*, 186(2/4):311–338, 2000. doi:10.1016/S0045-7825(99)00389-8.
- [559] K. Deb. *Multi-Objective Optimization Using Evolutionary Algorithms*. Wiley, Chichester, UK, 2001.
- [560] K. Deb. **Introduction to evolutionary multiobjective optimization**. In J. Branke, K. Deb, K. Miettinen, and R. Słowiński, editors, *Multi-objective Optimization: Interactive and Evolutionary Approaches*, volume 5252 of *Lecture Notes in Computer Science*, pages 59–96. Springer, Heidelberg, Germany, 2008. doi:10.1007/978-3-540-88908-3\_3.
- [561] K. Deb. **Multi-objective optimization**. In *Search methodologies*, pages 403–449. Springer, 2014.
- [562] K. Deb and R. B. Agrawal. **Simulated binary crossover for continuous search spaces**. *Complex Systems*, 9(2):115–148, 1995.  
*Keywords:* SBX.
- [563] K. Deb and S. Agrawal. **A Niche-Penalty Approach for Constraint Handling in Genetic Algorithms**. In A. Dobnikar, N. C. Steele, D. W. Pearson, and R. F. Albrecht, editors, *Artificial Neural Nets and Genetic Algorithms (ICANNGA-99)*, pages 235–243. Springer Verlag, 1999. doi:10.1007/978-3-7091-6384-9.  
*Keywords:* polynomial mutation.
- [564] K. Deb and D. Deb. **Analysing mutation schemes for real-parameter genetic algorithms**. *International Journal of Artificial Intelligence and Soft Computing*, 4(1):1–28, 2014.
- [565] K. Deb and S. Jain. **Multi-Speed Gearbox Design Using Multi-Objective Evolutionary Algorithms**. Technical Report 2002001, KanGAL, Feb. 2002.
- [566] K. Deb and S. Jain. **An Evolutionary Many-Objective Optimization Algorithm Using Reference-Point-Based Nondominated Sorting Approach, Part I: Solving Problems With Box Constraints**. *IEEE Transactions on Evolutionary Computation*, 18(4):577–601, 2014.

- [567] K. Deb and M. Köksalan. **Guest Editorial: Special Issue on Preference-based Multiobjective Evolutionary Algorithms.** *IEEE Transactions on Evolutionary Computation*, 14(5):669–670, Oct. 2010. doi:10.1109/TEVC.2010.2070371.
- [568] K. Deb and C. Myburgh. **Breaking the billion-variable barrier in real-world optimization using a customized evolutionary algorithm.** In T. Friedrich, F. Neumann, and A. M. Sutton, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2015*, pages 653–660. ACM Press, New York, NY, 2016.
- [569] K. Deb and A. Sinha. **Solving Bilevel Multi-Objective Optimization Problems Using Evolutionary Algorithms.** In M. Ehrgott, C. M. Fonseca, X. Gandibleux, J.-K. Hao, and M. Sevaux, editors, *Evolutionary Multi-criterion Optimization, EMO 2009*, volume 5467 of *Lecture Notes in Computer Science*, pages 110–124. Springer, Heidelberg, Germany, 2009.
- [570] K. Deb, S. Agarwal, A. Pratap, and T. Meyarivan. **A fast elitist non-dominated sorting genetic algorithm for multi-objective optimization: NSGA-II.** In M. Schoenauer et al., editors, *Proceedings of PPSN-VI, Sixth International Conference on Parallel Problem Solving from Nature*, volume 1917 of *Lecture Notes in Computer Science*, pages 849–858. Springer, Heidelberg, Germany, 2000.
- [571] K. Deb, L. Thiele, M. Laumanns, and E. Zitzler. **Scalable Test Problems for Evolutionary Multi-Objective Optimization.** Technical Report 112, Computer Engineering and Networks Laboratory (TIK), Swiss Federal Institute of Technology (ETH), Zürich, Switzerland, 2001.  
*Keywords:* DTLZ benchmark, Do not cite this TR! It is incorrect and it is superseded by [573].
- [572] K. Deb, A. Pratap, S. Agarwal, and T. Meyarivan. **A fast and elitist multi-objective genetic algorithm: NSGA-II.** *IEEE Transactions on Evolutionary Computation*, 6(2):182–197, 2002. doi:10.1109/4235.996017.
- [573] K. Deb, L. Thiele, M. Laumanns, and E. Zitzler. **Scalable Test Problems for Evolutionary Multiobjective Optimization.** In A. Abraham, L. Jain, and R. Goldberg, editors, *Evolutionary Multiobjective Optimization*, Advanced Information and Knowledge Processing, pages 105–145. Springer, London, UK, Jan. 2005.  
*Keywords:* DTLZ benchmark.
- [574] K. Deb, J. Sundar, N. Udaya Bhaskara Rao, and S. Chaudhuri. **Reference point based multi-objective optimization using evolutionary algorithms.** In M. Cattolico et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2006*, pages 635–642. ACM Press, New York, NY, 2006.
- [575] K. Deb, R. Tewari, M. Dixit, and J. Dutta. **Finding trade-off solutions close to KKT points using evolutionary multi-objective optimization.** In *Proceedings of the 2007 Congress on Evolutionary Computation (CEC 2007)*, pages 2109–2116. IEEE Press, Piscataway, NJ, 2007.
- [576] K. Deb, L. Zhu, and S. Kulkarni. **Handling Multiple Scenarios in Evolutionary Multi-Objective Numerical Optimization.** *IEEE Transactions on Evolutionary Computation*, 22(6):920–933, 2018. doi:10.1109/TEVC.2017.2776921.  
*Keywords:* scenario-based.

- [577] K. Deb, E. D. Goodman, C. A. Coello Coello, K. Klamroth, K. Miettinen, S. Mostaghim, and P. Reed, editors. *Evolutionary Multi-Criterion Optimization – 10th International Conference, EMO 2019, East Lansing, MI, USA, March 10-13, 2019, Proceedings*, volume 11411 of *Lecture Notes in Computer Science*. Springer International Publishing, Cham, Switzerland, 2019. ISBN 978-3-030-12597-4. doi:10.1007/978-3-030-12598-1.
- [578] K. Deb et al., editors. *Genetic and Evolutionary Computation Conference, GECCO 2004, Seattle, WA, USA, June 26-30, 2004, Proceedings, Part I*, volume 3102 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2004.
- [579] K. Deb et al., editors. *Genetic and Evolutionary Computation Conference, GECCO 2004, Seattle, WA, USA, June 26-30, 2004, Proceedings, Part II*, volume 3103 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2004.
- [580] R. Dechter, editor. *Principles and Practice of Constraint Programming, CP 2000, 6th International Conference, Singapore, September 18-21, 2000, Proceedings*, volume 1894 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2000.
- [581] W. A. Dees, Jr. and P. G. Karger. **Automated Rip-up and Reroute Techniques**. In *DAC’82, Proceedings of the 19th Design Automation Workshop*, pages 432–439. IEEE Press, 1982.
- [582] V. Dekhtyarenko. **Verification of weight coefficients in multicriteria optimization problems**. *Computer-Aided Design*, 13(6):339–344, 1981.
- [583] F. Della Croce, T. Garaix, and A. Grosso. **Iterated Local Search and Very Large Neighborhoods for the Parallel-machines Total Tardiness Problem**. *Computers & Operations Research*, 39(6):1213–1217, 2012.
- [584] M. Dell’Amico and M. Trubian. **Applying Tabu Search to the Job Shop Scheduling Problem**. *Annals of Operations Research*, 41:231–252, 1993.
- [585] M. Dell’Amico, M. Iori, S. Martello, and M. Monaci. **Heuristic and Exact Algorithms for the Identical Parallel Machine Scheduling Problem**. *INFORMS Journal on Computing*, 20(3):333–344, 2016.
- [586] M. Dell’Amico, M. Iori, S. Novellani, and T. Stützle. **A destroy and repair algorithm for the Bike sharing Rebalancing Problem**. *Computers & Operations Research*, 71: 146–162, 2016. doi:10.1016/j.cor.2016.01.011.  
*Keywords:* irace.
- [587] M. Delorme, M. Iori, and S. Martello. **Bin packing and cutting stock problems: Mathematical models and exact algorithms**. *European Journal of Operational Research*, 255(1):1–20, 2016.
- [588] X. Delorme, X. Gandibleux, and F. Degoutin. **Evolutionary, constructive and hybrid procedures for the bi-objective set packing problem**. *European Journal of Operational Research*, 204(2):206–217, 2010.  
*Annotation:* This paper cannot be found on internet!! Does it exist?
- [589] S. Dempe, G. Eichfelder, and J. Fliege. **On the effects of combining objectives in multi-objective optimization**. *Mathematical Methods of Operations Research*, 82(1): 1–18, 2015.

- [590] M. L. den Besten. *Simple Metaheuristics for Scheduling*. PhD thesis, FB Informatik, TU Darmstadt, Germany, 2004. URL <http://tuprints.ulb.tu-darmstadt.de/516/>.
- [591] M. L. den Besten, T. Stützle, and M. Dorigo. **Ant Colony Optimization for the Total Weighted Tardiness Problem**. In M. Schoenauer et al., editors, *Proceedings of PPSN-VI, Sixth International Conference on Parallel Problem Solving from Nature*, volume 1917 of *Lecture Notes in Computer Science*, pages 611–620. Springer, Heidelberg, Germany, 2000.
- [592] M. L. den Besten, T. Stützle, and M. Dorigo. **Design of Iterated Local Search Algorithms: An Example Application to the Single Machine Total Weighted Tardiness Problem**. In E. J. W. Boers et al., editors, *Applications of Evolutionary Computing, Proceedings of EvoWorkshops 2001*, volume 2037 of *Lecture Notes in Computer Science*, pages 441–452. Springer, Heidelberg, Germany, 2001.
- [593] J.-L. Deneubourg, S. Aron, S. Goss, and J.-M. Pasteels. **The Self-Organizing Exploratory Pattern of the Argentine Ant**. *Journal of Insect Behavior*, 3(2): 159–168, 1990. doi:10.1007/BF01417909.
- [594] J. Deng, W. Dong, R. Socher, L.-J. Li, K. Li, and L. Fei-Fei. **Imagenet: A large-scale hierarchical image database**. In *Computer Vision and Pattern Recognition, 2009. CVPR 2009. IEEE Conference on*, pages 248–255. IEEE, 2009.
- [595] R. Denysiuk, L. Costa, and I. Espírito Santo. **Many-objective optimization using differential evolution with variable-wise mutation restriction**. In C. Blum and E. Alba, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2013*, pages 591–598. ACM Press, New York, NY, 2013.
- [596] U. Derigs and U. Vogel. **Experience with a Framework for Developing Heuristics for Solving Rich Vehicle Routing Problems**. *Journal of Heuristics*, 20(1):75–106, 2014.
- [597] J. Derrac, S. García, D. Molina, and F. Herrera. **A practical tutorial on the use of nonparametric statistical tests as a methodology for comparing evolutionary and swarm intelligence algorithms**. *Swarm and Evolutionary Computation*, 1(1): 3–18, 2011.
- [598] P. Detti, F. Papalini, and G. Z. M. de Lara. **A multi-depot dial-a-ride problem with heterogeneous vehicles and compatibility constraints in healthcare**. *Omega*, 70: 1–14, 2017.
- [599] K. development team. **Keras**. <https://keras.io>, 2017.
- [600] S. Dewez. *On the toll setting problem*. PhD thesis, Faculté de Sciences, Université Libre de Bruxelles, 2014.  
*Annotation:* Supervised by Dr. Martine Labbé.
- [601] C. Dhaenens, L. Jourdan, and M.-E. Marmion, editors. *9th International Conference, LION 9, Lille, France, January 12-15, 2015. Revised Selected Papers*, volume 8994 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2015.
- [602] I. S. Dhillon, Y. Koren, R. Ghani, T. E. Senator, P. Bradley, R. Parekh, J. He, R. L. Grossman, and R. Uthurusamy, editors. *The 19th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, KDD 2013*. ACM Press, New York, NY, 2013.



- [603] G. A. Di Caro and M. Dorigo. **AntNet: Distributed Stigmergetic Control for Communications Networks**. *Journal of Artificial Intelligence Research*, 9:317–365, 1998.
- [604] G. A. Di Caro, F. Ducatelle, and L. M. Gambardella. **AntHocNet: An adaptive nature-inspired algorithm for routing in mobile ad hoc networks**. *European Transactions on Telecommunications*, 16(5):443–455, 2005.
- [605] L. Di Gaspero and A. Schaerf. **EASYLOCAL++: An object-oriented framework for flexible design of local search algorithms**. *Software — Practice & Experience*, 33(8):733–765, July 2003. URL <http://www.diegm.uniud.it/satt/papers/DiSc03.pdf>.  
*Keywords:* software engineering, local search, easylocal.
- [606] L. Di Gaspero and A. Schaerf. **Easysyn++: A tool for automatic synthesis of stochastic local search algorithms**. In T. Stützle, M. Birattari, and H. H. Hoos, editors, *Engineering Stochastic Local Search Algorithms. Designing, Implementing and Analyzing Effective Heuristics. SLS 2007*, volume 4638 of *Lecture Notes in Computer Science*, pages 177–181. Springer, Heidelberg, Germany, 2007.
- [607] L. Di Gaspero, A. Schaerf, and T. Stützle, editors. *Proceedings of MIC 2011, the 9th Metaheuristics International Conference*, 2011.
- [608] L. Di Gaspero, A. Rendl, and T. Urli. **Constraint-Based Approaches for Balancing Bike Sharing Systems**. In C. Schulte, editor, *Principles and Practice of Constraint Programming*, volume 8124 of *Lecture Notes in Computer Science*, pages 758–773. Springer, Heidelberg, Germany, 2013. doi:10.1007/978-3-642-40627-0\_56.  
*Keywords:* F-race.
- [609] L. Di Gaspero, A. Rendl, and T. Urli. **A Hybrid ACO+CP for Balancing Bicycle Sharing Systems**. In M. J. Blesa, C. Blum, P. Festa, A. Roli, and M. Sampels, editors, *Hybrid Metaheuristics*, volume 7919 of *Lecture Notes in Computer Science*, pages 198–212. Springer, Heidelberg, Germany, 2013. ISBN 978-3-642-38515-5. doi:10.1007/978-3-642-38516-2\_16.  
*Keywords:* F-race.
- [610] F. di Pierro, S.-T. Khu, and D. A. Savic. **An investigation on preference order ranking scheme for multiobjective evolutionary optimization**. *IEEE Transactions on Evolutionary Computation*, 11(1):17–45, 2007.
- [611] L. C. Dias, V. Mousseau, J. R. Figueira, and J. N. Clímaco. **An aggregation/disaggregation approach to obtain robust conclusions with ELECTRE TRI**. *European Journal of Operational Research*, 138(2):332–348, Apr. 2002.
- [612] D. Díaz, P. Valledor, P. Areces, J. Rodil, and M. Suárez. **An ACO Algorithm to Solve an Extended Cutting Stock Problem for Scrap Minimization in a Bar Mill**. In M. Dorigo et al., editors, *Swarm Intelligence, 9th International Conference, ANTS 2014*, volume 8667 of *Lecture Notes in Computer Science*, pages 13–24. Springer, Heidelberg, Germany, 2014.
- [613] J. E. Diaz, J. Handl, and D.-L. Xu. **Evolutionary robust optimization in production planning: interactions between number of objectives, sample size and choice of robustness measure**. *Computers & Operations Research*, 79:266–278, 2017. doi:10.1016/j.cor.2016.06.020.



*Keywords:* Evolutionary multi-objective optimization, Production planning, Robust optimization, Simulation-based optimization, Uncertainty modelling.

- [614] J. E. Diaz, J. Handl, and D.-L. Xu. **Integrating meta-heuristics, simulation and exact techniques for production planning of a failure-prone manufacturing system.** *European Journal of Operational Research*, 266(3):976–989, 2018. ISSN 0377-2217. [doi:10.1016/j.ejor.2017.10.062](https://doi.org/10.1016/j.ejor.2017.10.062).  
*Keywords:* Genetic algorithms, Combinatorial optimization, Production planning, Simulation-based optimization, Uncertainty modelling.
- [615] J.-Y. Ding, S. Song, J. N. D. Gupta, R. Zhang, R. Chiong, and C. Wu. **An Improved Iterated Greedy Algorithm with a Tabu-based Reconstruction Strategy for the No-wait Flowshop Scheduling Problem.** *Applied Soft Computing*, 30:604–613, 2015.
- [616] A. Dobnikar, N. C. Steele, D. W. Pearson, and R. F. Albrecht, editors. *Artificial Neural Nets and Genetic Algorithms (ICANNGA-99), Proceedings of the International Conference in Portorož, Slovenia, 1999.* Springer Verlag, 1999. [doi:10.1007/978-3-7091-6384-9](https://doi.org/10.1007/978-3-7091-6384-9).
- [617] K. F. Doerner, R. F. Hartl, and M. Reimann. **Are COMPETants more competent for problem solving? The case of a multiple objective transportation problem.** *Central European Journal for Operations Research and Economics*, 11(2):115–141, 2003.
- [618] K. F. Doerner, W. J. Gutjahr, R. F. Hartl, C. Strauss, and C. Stummer. **Pareto Ant Colony Optimization: A Metaheuristic Approach to Multiobjective Portfolio Selection.** *Annals of Operations Research*, 131:79–99, 2004.
- [619] K. F. Doerner, M. Gendreau, P. Greistorfer, W. J. Gutjahr, R. F. Hartl, and M. Reimann, editors. *6th Metaheuristics International Conference (MIC 2005)*, Vienna, Austria, 2005.
- [620] K. F. Doerner, G. Fuellerer, M. Gronalt, R. F. Hartl, and M. Iori. **Metaheuristics for the Vehicle Routing Problem with Loading Constraints.** *Networks*, 49(4):294–307, 2006.
- [621] K. F. Doerner, M. Gendreau, P. Greistorfer, W. J. Gutjahr, R. F. Hartl, and M. Reimann, editors. *Metaheuristics – Progress in Complex Systems Optimization*, volume 39 of *Operations Research/Computer Science Interfaces Series*. Springer, New York, NY, 2006.
- [622] K. F. Doerner, W. J. Gutjahr, R. F. Hartl, C. Strauss, and C. Stummer. **Pareto ant colony optimization with ILP preprocessing in multiobjective project portfolio selection.** *European Journal of Operational Research*, 171:830–841, 2006.
- [623] K. F. Doerner, W. J. Gutjahr, R. F. Hartl, C. Strauss, and C. Stummer. **Nature-Inspired Metaheuristics in Multiobjective Activity Crashing.** *Omega*, 36(6):1019–1037, 2008.
- [624] K. F. Doerner, D. Merkle, and T. Stützle. **Special issue on Ant Colony Optimization.** *Swarm Intelligence*, 3(1), 2009.
- [625] B. Doerr, F. Neumann, D. Sudholt, and C. Witt. **Runtime analysis of the 1-ANT ant colony optimizer.** *Theoretical Computer Science*, 412(1):1629–1644, 2011.

- [626] P. Domingos and G. Hulten. **Mining high-speed data streams**. In R. Ramakrishnan, S. J. Stolfo, R. J. Bayardo, and I. Parsa, editors, *The 6th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, KDD 2000*, pages 71–80. ACM Press, New York, NY, 2000.  
*Annotation:* <http://dl.acm.org/citation.cfm?id=347090>.
- [627] A. V. Donati, R. Montemanni, N. Casagrande, A. E. Rizzoli, and L. M. Gambardella. **Time dependent vehicle routing problem with a multi ant colony system**. *European Journal of Operational Research*, 185(3):1174–1191, 2008.
- [628] X. Dong, H. Huang, and P. Chen. **An Iterated Local Search Algorithm for the Permutation Flowshop Problem with Total Flowtime Criterion**. *Computers & Operations Research*, 36(5):1664–1669, 2009.
- [629] X. Dong, Ping, H. Huang, and M. Nowak. **A Multi-restart Iterated Local Search Algorithm for the Permutation Flow Shop Problem Minimizing Total Flow Time**. *Computers & Operations Research*, 40(2):627–632, 2013.
- [630] M. Dorigo. *Optimization, Learning and Natural Algorithms*. PhD thesis, Dipartimento di Elettronica, Politecnico di Milano, Italy, 1992. In Italian.
- [631] M. Dorigo. **Ant Colony Optimization**. *Scholarpedia*, 2(3):1461, 2007. [doi:10.4249/scholarpedia.1461](https://doi.org/10.4249/scholarpedia.1461).
- [632] M. Dorigo and C. Blum. **Ant colony optimization theory: A survey**. *Theoretical Computer Science*, 344(2-3):243–278, 2005.
- [633] M. Dorigo and G. A. Di Caro. **The Ant Colony Optimization Meta-Heuristic**. In D. Corne, M. Dorigo, and F. Glover, editors, *New Ideas in Optimization*, pages 11–32. McGraw Hill, London, UK, 1999.
- [634] M. Dorigo and L. M. Gambardella. **Ant Colony System**. Technical Report IRIDIA/96-05, IRIDIA, Université Libre de Bruxelles, Belgium, 1996.
- [635] M. Dorigo and L. M. Gambardella. **Ant Colonies for the Traveling Salesman Problem**. *BioSystems*, 43(2):73–81, 1997. [doi:10.1016/S0303-2647\(97\)01708-5](https://doi.org/10.1016/S0303-2647(97)01708-5).
- [636] M. Dorigo and L. M. Gambardella. **Ant Colony System: A Cooperative Learning Approach to the Traveling Salesman Problem**. *IEEE Transactions on Evolutionary Computation*, 1(1):53–66, 1997.
- [637] M. Dorigo and T. Stützle. **The Ant Colony Optimization Metaheuristic: Algorithms, Applications and Advances**. In F. Glover and G. Kochenberger, editors, *Handbook of Metaheuristics*, pages 251–285. Kluwer Academic Publishers, Norwell, MA, 2002.
- [638] M. Dorigo and T. Stützle. *Ant Colony Optimization*. MIT Press, Cambridge, MA, 2004.
- [639] M. Dorigo, V. Maniezzo, and A. Coloni. **The Ant System: An autocatalytic optimizing process**. Technical Report 91-016 Revised, Dipartimento di Elettronica, Politecnico di Milano, Italy, 1991.
- [640] M. Dorigo, V. Maniezzo, and A. Coloni. **Positive Feedback as a Search Strategy**. Technical Report 91-016, Dipartimento di Elettronica, Politecnico di Milano, Italy, 1991.

- [641] M. Dorigo, V. Maniezzo, and A. Colorni. **Ant System: Optimization by a Colony of Cooperating Agents**. *IEEE Transactions on Systems, Man, and Cybernetics – Part B*, 26(1):29–41, 1996.
- [642] M. Dorigo, G. A. Di Caro, and L. M. Gambardella. **Ant Algorithms for Discrete Optimization**. *Artificial Life*, 5(2):137–172, 1999.
- [643] M. Dorigo, T. Stützle, and G. A. Di Caro. **Special Issue on “Ant Algorithms”**. *Future Generation Computer Systems*, 16(8), 2000.
- [644] M. Dorigo, L. M. Gambardella, M. Middendorf, and T. Stützle. **Guest Editorial: Special Section on Ant Colony Optimization**. *IEEE Transactions on Evolutionary Computation*, 6(4):317–320, 2002. doi:10.1109/TEVC.2002.802446.
- [645] M. Dorigo, M. Birattari, and T. Stützle. **Ant Colony Optimization: Artificial Ants as a Computational Intelligence Technique**. *IEEE Computational Intelligence Magazine*, 1(4):28–39, 2006.
- [646] M. Dorigo, M. A. Montes de Oca, S. Oliveira, and T. Stützle. **Ant Colony Optimization**. In J. J. Cochran, editor, *Wiley Encyclopedia of Operations Research and Management Science*, volume 1, pages 114–125. John Wiley & Sons, 2011. doi:10.1002/9780470400531.
- [647] M. Dorigo, M. Birattari, X. Li, M. López-Ibáñez, K. Ohkura, C. Pinciroli, and T. Stützle, editors. *Swarm Intelligence, 10th International Conference, ANTS 2016, Brussels, Belgium, September 7-9, 2016, Proceedings*, volume 9882 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2016. doi:10.1007/978-3-319-44427-7.
- [648] M. Dorigo, M. Birattari, X. Li, M. López-Ibáñez, K. Ohkura, C. Pinciroli, and T. Stützle. **ANTS 2016 Special Issue: Editorial**. *Swarm Intelligence*, Nov. 2017. doi:10.1007/s11721-017-0146-5.
- [649] M. Dorigo, M. Birattari, A. L. Christensen, A. Reina, and V. Trianni, editors. *Swarm Intelligence, 11th International Conference, ANTS 2018, Rome, Italy, October 29–31, 2018, Proceedings*, volume 11172 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2018.
- [650] M. Dorigo et al., editors. *Abstract proceedings of ANTS 2000 – From Ant Colonies to Artificial Ants: Second International Workshop on Ant Algorithms*, Sept., 7–9 2000. IRIDIA, Université Libre de Bruxelles, Belgium.
- [651] M. Dorigo et al., editors. *Ant Algorithms, Third International Workshop, ANTS 2002, Brussels, Belgium, September 12-14, 2002, Proceedings*, volume 2463 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2002.
- [652] M. Dorigo et al., editors. *Ant Colony Optimization and Swarm Intelligence, 4th International Workshop, ANTS 2004*, volume 3172 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2004.
- [653] M. Dorigo et al., editors. *Ant Colony Optimization and Swarm Intelligence, 5th International Workshop, ANTS 2006*, volume 4150 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2006.

- [654] M. Dorigo et al., editors. *Ant Colony Optimization and Swarm Intelligence, 6th International Conference, ANTS 2008*, volume 5217 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2008.
- [655] M. Dorigo et al., editors. *Ant Colony Optimization and Swarm Intelligence, 7th International Conference, ANTS 2010*, volume 6234 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2010.
- [656] M. Dorigo et al., editors. *Swarm Intelligence, 8th International Conference, ANTS 2012*, volume 7461 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2012.
- [657] M. Dorigo et al., editors. *Swarm Intelligence, 9th International Conference, ANTS 2014*, volume 8667 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2014.
- [658] M. Doumpos and C. Zopounidis. **Preference disaggregation and statistical learning for multicriteria decision support: A review.** *European Journal of Operational Research*, 209(3):203–214, 2011.
- [659] E. Dovgan, T. Tušar, and B. Filipič. **Parameter tuning in an evolutionary algorithm for commodity transportation optimization.** *Evolutionary Computation*, pages 1–8, 2010.
- [660] J. Dréo. **Using performance fronts for parameter setting of stochastic metaheuristics.** In F. Rothlauf, editor, *GECCO (Companion)*, pages 2197–2200. ACM Press, New York, NY, 2009. doi:10.1145/1570256.1570301.
- [661] J. Dréo and P. Siarry. **A New Ant Colony Algorithm Using the Heterarchical Concept Aimed at Optimization of Multim minima Continuous Functions.** In M. Dorigo et al., editors, *Ant Algorithms, Third International Workshop, ANTS 2002*, volume 2463 of *Lecture Notes in Computer Science*, pages 216–221. Springer, Heidelberg, Germany, 2002.
- [662] J. Dréo and P. Siarry. **Continuous interacting ant colony algorithm based on dense heterarchy.** *Future Generation Computer Systems*, 20(5):841–856, 2004.
- [663] M. M. Drugan and D. Thierens. **Path-Guided Mutation for Stochastic Pareto Local Search Algorithms.** In R. Schaefer, C. Cotta, J. Kolodziej, and G. Rudolph, editors, *Parallel Problem Solving from Nature, PPSN XI*, volume 6238 of *Lecture Notes in Computer Science*, pages 485–495. Springer, Heidelberg, Germany, 2010.
- [664] M. M. Drugan and D. Thierens. **Stochastic Pareto local search: Pareto neighbourhood exploration and perturbation strategies.** *Journal of Heuristics*, 18(5):727–766, 2012.
- [665] J. Du and J. Y.-T. Leung. **Minimizing Total Tardiness on One Machine is NP-Hard.** *Mathematics of Operations Research*, 15(3):483–495, 1990.
- [666] J. Dubois-Lacoste. **Weight Setting Strategies for Two-Phase Local Search: A Study on Biobjective Permutation Flowshop Scheduling.** Technical Report TR/IRIDIA/2009-024, IRIDIA, Université Libre de Bruxelles, Belgium, 2009.
- [667] J. Dubois-Lacoste. **A study of Pareto and Two-Phase Local Search Algorithms for Biobjective Permutation Flowshop Scheduling.** Master’s thesis, IRIDIA, Université Libre de Bruxelles, Belgium, 2009.

- [668] J. Dubois-Lacoste. **Effective Stochastic Local Search Algorithms For Bi-Objective Permutation Flowshop Scheduling**. Rapport d’avancement de recherches présenté pour la formation doctorale en sciences de l’ingénieur, IRIDIA, Université Libre de Bruxelles, Belgium, 2010.
- [669] J. Dubois-Lacoste. *Anytime Local Search for Multi-Objective Combinatorial Optimization: Design, Analysis and Automatic Configuration*. PhD thesis, IRIDIA, École polytechnique, Université Libre de Bruxelles, Belgium, 2014.  
*Annotation:* Supervised by Thomas Stützle and Manuel López-Ibáñez.
- [670] J. Dubois-Lacoste and T. Stützle. **Tuning of a Stigmergy-based Traffic Light Controller as a Dynamic Optimization Problem**. In *Proceedings of the 2017 Congress on Evolutionary Computation (CEC 2017)*, pages 1–8. IEEE Press, Piscataway, NJ, 2017.
- [671] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Effective Hybrid Stochastic Local Search Algorithms for Biobjective Permutation Flowshop Scheduling**. In M. J. Blesa, C. Blum, L. Di Gaspero, A. Roli, M. Sampels, and A. Schaerf, editors, *Hybrid Metaheuristics*, volume 5818 of *Lecture Notes in Computer Science*, pages 100–114. Springer, Heidelberg, Germany, 2009. doi:10.1007/978-3-642-04918-7\_8.
- [672] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Effective Hybrid Stochastic Local Search Algorithms for Biobjective Permutation Flowshop Scheduling**. Technical Report TR/IRIDIA/2009-020, IRIDIA, Université Libre de Bruxelles, Belgium, June 2009. URL <http://iridia.ulb.ac.be/IridiaTrSeries/IridiaTr2009-020r001.pdf>. Published in the proceedings of Hybrid Metaheuristics 2009 [671].
- [673] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Supplementary material: Improving the Anytime Behavior of Two-Phase Local Search**. <http://iridia.ulb.ac.be/supp/IridiaSupp2010-012>, 2010.
- [674] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Supplementary material: A Hybrid TP+PLS Algorithm for Bi-objective Flow-shop Scheduling Problems**. <http://iridia.ulb.ac.be/supp/IridiaSupp2010-001>, 2010.
- [675] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Adaptive “Anytime” Two-Phase Local Search**. In C. Blum and R. Battiti, editors, *Learning and Intelligent Optimization, 4th International Conference, LION 4*, volume 6073 of *Lecture Notes in Computer Science*, pages 52–67. Springer, Heidelberg, Germany, 2010. doi:10.1007/978-3-642-13800-3\_5.
- [676] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Adaptive “Anytime” Two-Phase Local Search**. Technical Report TR/IRIDIA/2009-026, IRIDIA, Université Libre de Bruxelles, Belgium, 2010. URL <http://iridia.ulb.ac.be/IridiaTrSeries/IridiaTr2009-026r001.pdf>. Published in the proceedings of LION 4 [675].
- [677] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **A Hybrid TP+PLS Algorithm for Bi-objective Flow-Shop Scheduling Problems**. Technical Report TR/IRIDIA/2010-019, IRIDIA, Université Libre de Bruxelles, Belgium, 2010. URL <http://iridia.ulb.ac.be/IridiaTrSeries/IridiaTr2010-019r001.pdf>. Published in *Computers & Operations Research* [681].
- [678] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Improving the Anytime Behavior of Two-Phase Local Search**. Technical Report TR/IRIDIA/2010-022,



- IRIDIA, Université Libre de Bruxelles, Belgium, 2010. URL <http://iridia.ulb.ac.be/IridiaTrSeries/IridiaTr2010-022r001.pdf>. Published in *Annals of Mathematics and Artificial Intelligence* [680].
- [679] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Supplementary material: Automatic Configuration of State-of-the-art Multi-objective Optimizers Using the TPLS+PLS Framework.** <http://iridia.ulb.ac.be/supp/IridiaSupp2011-005>, 2011.
- [680] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Improving the Anytime Behavior of Two-Phase Local Search.** *Annals of Mathematics and Artificial Intelligence*, 61(2):125–154, 2011. doi:10.1007/s10472-011-9235-0.
- [681] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **A Hybrid TP+PLS Algorithm for Bi-objective Flow-Shop Scheduling Problems.** *Computers & Operations Research*, 38(8):1219–1236, 2011. doi:10.1016/j.cor.2010.10.008. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2010-001/>.
- [682] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Automatic Configuration of State-of-the-art Multi-objective Optimizers Using the TP+PLS Framework.** In N. Krasnogor and P. L. Lanzi, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2011*, pages 2019–2026. ACM Press, New York, NY, 2011. doi:10.1145/2001576.2001847.
- [683] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Supplementary Material: Pareto Local Search Variants for Anytime Bi-Objective Optimization.** <http://iridia.ulb.ac.be/supp/IridiaSupp2012-004>, 2012.
- [684] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Pareto Local Search Algorithms for Anytime Bi-objective Optimization.** In J.-K. Hao and M. Middendorf, editors, *Proceedings of EvoCOP 2012 – 12th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 7245 of *Lecture Notes in Computer Science*, pages 206–217. Springer, Heidelberg, Germany, 2012. doi:10.1007/978-3-642-29124-1\_18.
- [685] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Combining Two Search Paradigms for Multi-objective Optimization: Two-Phase and Pareto Local Search.** In E.-G. Talbi, editor, *Hybrid Metaheuristics*, volume 434 of *Studies in Computational Intelligence*, pages 97–117. Springer Verlag, 2013. doi:10.1007/978-3-642-30671-6\_3. URL <http://www.springer.com/engineering/computational+intelligence+and+complexity/book/978-3-642-30670-9>.
- [686] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Supplementary material: Anytime Pareto Local Search.** <http://iridia.ulb.ac.be/supp/IridiaSupp2013-003>, 2013.
- [687] J. Dubois-Lacoste, H. H. Hoos, and T. Stützle. **On the Empirical Scaling Behaviour of State-of-the-art Local Search Algorithms for the Euclidean TSP.** In S. Silva and A. I. Esparcia-Alcázar, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2015*, pages 377–384, New York, NY, 2015. ACM Press. doi:10.1145/2739480.2754747.
- [688] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Anytime Pareto Local Search.** *European Journal of Operational Research*, 243(2):369–385, 2015. doi:10.



- 1016/j.ejor.2014.10.062. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2013-003/>.
- [689] J. Dubois-Lacoste, F. Pagnozzi, and T. Stützle. **Supplementary material: An iterated greedy algorithm with optimization of partial solutions for the permutation flowshop problem.** <http://iridia.ulb.ac.be/supp/IridiaSupp2013-006>, 2017.
- [690] J. Dubois-Lacoste, F. Pagnozzi, and T. Stützle. **An Iterated Greedy Algorithm with Optimization of Partial Solutions for the Permutation Flowshop Problem.** *Computers & Operations Research*, 81:160–166, 2017. doi:10.1016/j.cor.2016.12.021. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2013-006>.
- [691] G. Dueck. **New Optimization Heuristics: the Great Deluge Algorithm and the Record-To-Record Travel.** *Journal of Computational Physics*, 104(1):86–92, 1993.
- [692] G. Dueck and T. Scheuer. **Threshold Accepting: A General Purpose Optimization Algorithm Appearing Superior to Simulated Annealing.** *Journal of Computational Physics*, 90(1):161–175, 1990.
- [693] G. Dueck, M. Maehler, J. Schneider, G. Schrimpf, and H. Stamm-Wilbrandt. **Optimization with Ruin Recreate.** US Patent 6,418,398 B1, July 2002. Filed on October 1, 1999 and granted on July 9, 2002; Assignee is IBM Corporation, Armonk, NY (US).
- [694] C. Duin and S. Voß. **The Pilot Method: A Strategy for Heuristic Repetition with Application to the Steiner Problem in Graphs.** *Networks*, 34(3):181–191, 1999.
- [695] Y. Dumas, J. Desrosiers, E. Gelinas, and M. M. Solomon. **An Optimal Algorithm for the Traveling Salesman Problem with Time Windows.** *Operations Research*, 43(2):367–371, 1995.
- [696] I. Dumitrescu and T. Stützle. **Combinations of Local Search and Exact Algorithms.** In G. R. Raidl and J. Gottlieb, editors, *Proceedings of EvoCOP 2003 – 3rd European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 2611 of *Lecture Notes in Computer Science*, pages 211–223. Springer, Heidelberg, Germany, 2003.
- [697] I. Dumitrescu and T. Stützle. **Usage of Exact Algorithms to Enhance Stochastic Local Search Algorithms.** In V. Maniezzo, T. Stützle, and S. Voß, editors, *Matheuristics—Hybridizing Metaheuristics and Mathematical Programming*, volume 10 of *Annals of Information Systems*, pages 103–134. Springer, New York, NY, 2009.
- [698] J. J. Durillo, A. J. Nebro, F. Luna, and E. Alba. **On the Effect of the Steady-State Selection Scheme in Multi-Objective Genetic Algorithms.** In M. Ehrgott, C. M. Fonseca, X. Gandibleux, J.-K. Hao, and M. Sevaux, editors, *Evolutionary Multi-criterion Optimization, EMO 2009*, volume 5467 of *Lecture Notes in Computer Science*, pages 183–197. Springer, Heidelberg, Germany, 2009.
- [699] H. W. E., S. J. E., and K. N., editors. *Recent Advances in Memetic Algorithms*, volume 166 of *Studies in Fuzziness and Soft Computing*. Springer, Berlin, Heidelberg, 2005.

- [700] R. C. Eberhart and J. Kennedy. **A New Optimizer Using Particle Swarm Theory**. In *Proceedings of the Sixth International Symposium on Micro Machine and Human Science*, pages 39–43, 1995.
- [701] K. Eggensperger, F. Hutter, H. H. Hoos, and K. Leyton-Brown. **Efficient Benchmarking of Hyperparameter Optimizers via Surrogates**. In B. Bonet and S. Koenig, editors, *AAAI*, pages 1114–1120. AAAI Press, 2015.
- [702] R. W. Eglese. **Simulated Annealing: a Tool for Operational Research**. *European Journal of Operational Research*, 46(3):271–281, 1990.
- [703] M. Ehrgott. *Multicriteria Optimization*, volume 491 of *Lecture Notes in Economics and Mathematical Systems*. Springer, Berlin, Germany, 2000.
- [704] M. Ehrgott. *Multicriteria Optimization*. Springer, Berlin, Germany, 2nd edition, 2005. doi:10.1007/3-540-27659-9.
- [705] M. Ehrgott. **A discussion of scalarization techniques for multiple objective integer programming**. *Annals of Operations Research*, 147(1):343–360, 2006.
- [706] M. Ehrgott and X. Gandibleux. **Approximative Solution Methods for Combinatorial Multicriteria Optimization**. *TOP*, 12(1):1–88, 2004.
- [707] M. Ehrgott and X. Gandibleux. **Hybrid Metaheuristics for Multi-objective Combinatorial Optimization**. In C. Blum, M. J. Blesa, A. Roli, and M. Sampels, editors, *Hybrid Metaheuristics: An emergent approach for optimization*, volume 114 of *Studies in Computational Intelligence*, pages 221–259. Springer, Berlin, Germany, 2008. doi:10.1007/978-3-540-78295-7\_8.
- [708] M. Ehrgott, C. M. Fonseca, X. Gandibleux, J.-K. Hao, and M. Sevaux, editors. *Evolutionary Multi-Criterion Optimization. 5th International Conference, EMO 2009*, volume 5467 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2009.
- [709] M. Ehrgott, J. R. Figueira, and S. Greco, editors. *Trends in Multiple Criteria Decision Analysis*, volume 142 of *International Series in Operations Research & Management Science*. Springer, US, 2010.
- [710] A. E. Eiben and S. K. Smit. **Parameter Tuning for Configuring and Analyzing Evolutionary Algorithms**. *Swarm and Evolutionary Computation*, 1(1):19–31, 2011. doi:10.1016/j.swevo.2011.02.001.
- [711] A. E. Eiben and J. E. Smith. *Introduction to Evolutionary Computing*. Springer, 2003. ISBN 3540401849.
- [712] A. E. Eiben and J. E. Smith. *Introduction to Evolutionary Computing*. Natural Computing Series. Springer, 2 edition, 2007.
- [713] A. E. Eiben, T. Bäck, M. Schoenauer, and H.-P. Schwefel, editors. *Proceedings of PPSN-V, Fifth International Conference on Parallel Problem Solving from Nature*, volume 1498 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 1998.
- [714] A. E. Eiben, R. Hinterding, and Z. Michalewicz. **Parameter Control in Evolutionary Algorithms**. *IEEE Transactions on Evolutionary Computation*, 3(2):124–141, 1999.

- [715] A. E. Eiben, M. Horvath, W. Kowalczyk, and M. C. Schut. **Reinforcement learning for online control of evolutionary algorithms**. In *International Workshop on Engineering Self-Organising Applications*, pages 151–160. Springer, 2006.
- [716] A. E. Eiben, Z. Michalewicz, M. Schoenauer, and J. E. Smith. **Parameter Control in Evolutionary Algorithms**. In F. Lobo, C. F. Lima, and Z. Michalewicz, editors, *Parameter Setting in Evolutionary Algorithms*, pages 19–46. Springer, Berlin, Germany, 2007.
- [717] S. Eker and J. H. Kwakkel. **Including robustness considerations in the search phase of Many-Objective Robust Decision Making**. *Environmental Modelling & Software*, 105:201–216, 2018.  
*Keywords:* scenario-based.
- [718] M. El-Abd. **Opposition-based Artificial Bee Colony Algorithm**. In N. Krasnogor and P. L. Lanzi, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2011*, pages 109–116. ACM Press, New York, NY, 2011.
- [719] J. L. Elman. **Distributed representations, simple recurrent networks, and grammatical structure**. *Machine Learning*, 7(2-3):195–225, 1991.
- [720] V. A. Emelichev and V. A. Perepelitsa. **Complexity of Vector Optimization Problems on Graphs**. *Optimization*, 22(6):906–918, 1991. doi:10.1080/02331939108843732.
- [721] V. A. Emelichev and V. A. Perepelitsa. **On the Cardinality of the Set of Alternatives in Discrete Many-criterion Problems**. *Discrete Mathematics and Applications*, 2(5):461–471, 1992.
- [722] M. T. M. Emmerich and C. M. Fonseca. **Computing Hypervolume Contributions in Low Dimensions: Asymptotically Optimal Algorithm and Complexity Results**. In R. H. C. Takahashi et al., editors, *Evolutionary Multi-criterion Optimization, EMO 2011*, volume 6576 of *Lecture Notes in Computer Science*, pages 121–135. Springer, Heidelberg, Germany, 2011. doi:10.1007/978-3-642-19893-9\_9.
- [723] S. Eppe, Y. De Smet, and T. Stützle. **A bi-objective optimization model to eliciting decision maker’s preferences for the PROMETHEE II method**. In R. I. Brafman, F. Roberts, and A. Tsoukiàs, editors, *Algorithmic Decision Theory, Third International Conference, ADT 2011*, volume 6992 of *Lecture Notes in Artificial Intelligence*, pages 56–66. Springer, Heidelberg, Germany, 2011.
- [724] S. Eppe, M. López-Ibáñez, T. Stützle, and Y. De Smet. **An Experimental Study of Preference Model Integration into Multi-Objective Optimization Heuristics**. In *Proceedings of the 2011 Congress on Evolutionary Computation (CEC 2011)*, pages 2751–2758. IEEE Press, Piscataway, NJ, 2011. doi:10.1109/CEC.2011.5949963.
- [725] E. Ertin, A. N. Dean, M. L. Moore, and K. L. Priddy. **Dynamic Optimization for Optimal Control of Water Distribution Systems**. In K. L. Priddy, P. E. Keller, and P. J. Angeline, editors, *Applications and Science of Computational Intelligence IV, Proceedings of SPIE*, volume 4390, pages 142–149, Mar. 2001.
- [726] ESANN. *Proceedings of 22th European Symposium on Artificial Neural Networks, ESANN 2014, Bruges, Belgium, April 23-25, 2014*, 2014.  
*Annotation:* <https://www.elen.ucl.ac.be/esann/proceedings/papers.php?ann=2014>.

- [727] ESANN. *Proceedings of 23rd European Symposium on Artificial Neural Networks, ESANN 2015, Bruges, Belgium, April 22-24, 2015*, 2015.  
Annotation: <https://www.elen.ucl.ac.be/esann/proceedings/papers.php?ann=2015>.
- [728] V. Esat and M. Hall. **Water resources system optimization using genetic algorithms**. In A. Verwey, A. Minns, V. Babovic, and C. Maksimović, editors, *Hydroinformatics'94*, pages 225–231, Balkema, Rotterdam, The Netherlands, 1994.
- [729] L. J. Eshelman, editor. *Proceedings of the 6th International Conference on Genetic Algorithms, Pittsburgh, PA, USA, July 15-19, 1995*. Morgan Kaufmann Publishers, San Francisco, CA, 1995.
- [730] L. J. Eshelman and J. D. Schaffer. **Real-Coded Genetic Algorithms and Interval-Schemata**. In D. Whitley, editor, *Foundations of Genetic Algorithms (FOGA)*, pages 187–202. Morgan Kaufmann Publishers, 1992. ISBN 1-55860-263-1.
- [731] L. J. Eshelman, A. Caruana, and J. D. Schaffer. **Biases in the Crossover Landscape**. In J. D. Schaffer, editor, *Proc. of the Third Int. Conf. on Genetic Algorithms*, pages 86–91. Morgan Kaufmann Publishers, San Mateo, CA, 1989.
- [732] A. I. Esparcia-Alcázar and A. M. Mora, editors. *Applications of Evolutionary Computation*, volume 8602 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2014.
- [733] I. Essafi, Y. Mati, and S. Dauzère-Pères. **A Genetic Local Search Algorithm for Minimizing Total Weighted Tardiness in the Job-shop Scheduling Problem**. *Computers & Operations Research*, 35(8):2599–2616, 2008.
- [734] C. J. Eyckelhof and M. Snoek. **Ant Systems for a Dynamic TSP: Ants Caught in a Traffic Jam**. In M. Dorigo et al., editors, *Ant Algorithms, Third International Workshop, ANTS 2002*, volume 2463 of *Lecture Notes in Computer Science*, pages 88–99. Springer, Heidelberg, Germany, 2002.
- [735] W. Fan and A. Bifet. **Mining big data: current status, and forecast to the future**. *ACM SIGKDD Explorations Newsletter*, 14(2):1–5, 2013.
- [736] G. Fandel and T. Gal, editors. *MCDM theory and Application, Proceedings*. Number 177 in *Lecture Notes in Economics and Mathematical Systems*. Springer, Heidelberg, Germany, 1980.
- [737] D. Fanelli. **Negative results are disappearing from most disciplines and countries**. *Scientometrics*, 90(3):891–904, 2012. doi:10.1007/s11192-011-0494-7.
- [738] H. Faria, Jr, S. Binato, M. G. C. Resende, and D. J. Falcão. **Power transmission network design by a greedy randomized adaptive path relinking approach**. *IEEE Transactions on Power Systems*, 20(1):43–49, 2005.
- [739] M. Farina and P. Amato. **On the Optimal Solution Definition for Many-criteria Optimization Problems**. In *Proceedings of the NAFIPS-FLINT International Conference'2002*, pages 233–238, Piscataway, New Jersey, June 2002. IEEE Service Center.

- [740] R. Farmani, G. A. Walters, and D. A. Savic. **Evolutionary multi-objective optimization of the design and operation of water distribution network: total cost vs. reliability vs. water quality.** *Journal of Hydroinformatics*, 8(3):165–179, 2006.
- [741] D. Favaretto, E. Moretti, and P. Pellegrini. **Ant colony system approach for variants of the traveling salesman problem with time windows.** *Journal of Information and Optimization Sciences*, 27(1):35–54, 2006.
- [742] D. Favaretto, E. Moretti, and P. Pellegrini. **Ant Colony System for a VRP with Multiple Time Windows and Multiple Visits.** *Journal of Interdisciplinary Mathematics*, 10(2):263–284, 2007.
- [743] D. Favaretto, E. Moretti, and P. Pellegrini. **On the explorative behavior of  $\text{MAX-MIN}$  Ant System.** In T. Stützle, M. Birattari, and H. H. Hoos, editors, *Engineering Stochastic Local Search Algorithms. Designing, Implementing and Analyzing Effective Heuristics. SLS 2009*, volume 5752 of *Lecture Notes in Computer Science*, pages 115–119. Springer, Heidelberg, Germany, 2009.
- [744] C. Fawcett and H. H. Hoos. **Analysing Differences between Algorithm Configurations through Ablation.** In *Proceedings of MIC 2013, the 10th Metaheuristics International Conference*, pages 123–132, 2013.
- [745] C. Fawcett and H. H. Hoos. **Analysing Differences Between Algorithm Configurations through Ablation.** *Journal of Heuristics*, 22(4):431–458, 2016.
- [746] C. Fawcett, M. Helmert, H. H. Hoos, E. Karpas, G. Röger, and J. Seipp. **FD-Autotune: Domain-Specific Configuration using Fast-Downward.** In E. Karpas, S. Jiménez Celorrio, and S. Kambhampati, editors, *Proceedings of ICAPS-PAL11*, 2011.
- [747] T. A. Feo and M. G. C. Resende. **A Probabilistic Heuristic for a Computationally Difficult Set Covering Problem.** *Operations Research Letters*, 8(2):67–71, 1989.
- [748] T. A. Feo and M. G. C. Resende. **Greedy Randomized Adaptive Search Procedures.** *Journal of Global Optimization*, 6(2):109–113, 1995.
- [749] T. A. Feo, M. G. C. Resende, and S. H. Smith. **A Greedy Randomized Adaptive Search Procedure for Maximum Independent Set.** *Operations Research*, 42: 860–878, Oct. 1994.
- [750] E. Fernandez, J. Navarro, and S. Bernal. **Multicriteria Sorting Using a Valued Indifference Relation Under a Preference Disaggregation Paradigm.** *European Journal of Operational Research*, 198(2):602–609, 2009.
- [751] S. Fernández, S. Álvarez, D. Díaz, M. Iglesias, and B. Ena. **Scheduling a Galvanizing Line by Ant Colony Optimization.** In M. Dorigo et al., editors, *Swarm Intelligence, 9th International Conference, ANTS 2014*, volume 8667 of *Lecture Notes in Computer Science*, pages 146–157. Springer, Heidelberg, Germany, 2014. doi:10.1007/978-3-319-09952-1\_13.
- [752] S. Fernández, S. Álvarez, E. Malatsetxebarria, P. Valledor, and D. Díaz. **Performance Comparison of Ant Colony Algorithms for the Scheduling of Steel Production**

- Lines.** In J. L. J. Laredo, S. Silva, and A. I. Esparcia-Alcázar, editors, *GECCO (Companion)*. ACM Press, New York, NY, 2015. doi:10.1145/2739482.2764658.  
*Keywords:* irace.
- [753] S. Fernández, P. Valledor, D. Díaz, E. Malatsetxebarria, and M. Iglesias. **Criticality of Response Time in the usage of Metaheuristics in Industry.** In T. Friedrich, F. Neumann, and A. M. Sutton, editors, *GECCO (Companion)*, pages 937–940. ACM Press, New York, NY, 2016.
  - [754] V. Fernandez-Viagas and J. M. Framiñán. **On Insertion Tie-breaking Rules in Heuristics for the Permutation Flowshop Scheduling Problem.** *Computers & Operations Research*, 45:60–67, 2014.
  - [755] V. Fernandez-Viagas and J. M. Framiñán. **A Beam-search-based Cnstructive Heuristic for the PFSP to Minimise Total Flowtime.** *Computers & Operations Research*, 81:167–177, 2017.
  - [756] V. Fernandez-Viagas and J. M. Framiñán. **Iterated-greedy-based algorithms with beam search initialization for the permutation flowshop to minimise total tardiness.** *Expert Systems with Applications*, 94:58–69, 2018.
  - [757] V. Fernandez-Viagas, R. Ruiz, and J. M. Framiñán. **A New Vision of Approximate Methods for the Permutation Flowshop to Minimise Makespan: State-of-the-art and Computational Evaluation.** *European Journal of Operational Research*, 257(3):707–721, 2017.
  - [758] V. Fernandez-Viagas, J. M. S. Valente, and J. M. Framiñán. **Iterated-greedy-based algorithms with Beam Search Initialization for the Permutation Flowshop to Minimise Total Tardiness.** *Expert Systems with Applications*, 94:58 – 69, 2018.
  - [759] J. C. Ferreira, C. M. Fonseca, and A. Gaspar-Cunha. **Methodology to select solutions from the Pareto-optimal set: a comparative study.** In D. Thierens et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2007*, pages 789–796. ACM Press, New York, NY, 2007.
  - [760] R. Ferreira da Silva and S. Urrutia. **A general VNS heuristic for the traveling salesman problem with time windows.** *Discrete Optimization*, 7(4):203–211, 2010.  
*Keywords:* TSPTW.
  - [761] A. Ferrer, D. Guimarans, H. Ramalhinho Lourenço, and A. A. Juan. **A BRILS Metaheuristic for Non-smooth Flow-shop Problems with Failure-risk Costs.** *Expert Systems with Applications*, 44:177–186, 2016.
  - [762] J. Ferrer, J. García-Nieto, E. Alba, and F. Chicano. **Intelligent Testing of Traffic Light Programs: Validation in Smart Mobility Scenarios.** *Mathematical Problems in Engineering*, 2016:1–19, 2016. doi:10.1155/2016/3871046.
  - [763] J. Ferrer, M. López-Ibáñez, and E. Alba. **Reliable simulation-optimization of traffic lights in a real-world city.** *Applied Soft Computing*, 78:697–711, 2019. doi:10.1016/j.asoc.2019.03.016.
  - [764] P. Festa, M. Sellmann, and J. Vanschoren, editors. *10th International Conference, LION 10, Ischia, Italy, May 29 - June 1, 2016. Revised Selected Papers*, volume 10079 of *Lecture Notes in Computer Science*. Springer, Cham, Switzerland, 2016.



- [765] M. Feurer, A. Klein, K. Eggenberger, J. Springenberg, M. Blum, and F. Hutter. **Efficient and robust automated machine learning**. In C. Cortes, N. D. Lawrence, D. D. Lee, M. Sugiyama, and R. Garnett, editors, *Advances in Neural Information Processing Systems (NIPS 28)*, pages 2962–2970, 2015. URL <http://papers.nips.cc/book/advances-in-neural-information-processing-systems-28-2015>.
- [766] Á. Fialho. *Adaptive operator selection for optimization*. PhD thesis, Université Paris Sud-Paris XI, 2010.
- [767] Á. Fialho, L. Da Costa, M. Schoenauer, and M. Sebag. **Analyzing Bandit-based Adaptive Operator Selection Mechanisms**. *Annals of Mathematics and Artificial Intelligence*, 60(1–2):25–64, 2010.
- [768] Á. Fialho, R. Ros, M. Schoenauer, and M. Sebag. **Comparison-based adaptive strategy selection with bandits in differential evolution**. In R. Schaefer, C. Cotta, J. Kolodziej, and G. Rudolph, editors, *Parallel Problem Solving from Nature, PPSN XI*, volume 6238 of *Lecture Notes in Computer Science*, pages 194–203. Springer, Heidelberg, Germany, 2010.
- [769] Á. Fialho, M. Schoenauer, and M. Sebag. **Fitness-AUC bandit adaptive strategy selection vs. the probability matching one within differential evolution: an empirical comparison on the BBOB-2010 noiseless testbed**. In M. Pelikan and J. Branke, editors, *GECCO (Companion)*, pages 1535–1542. ACM Press, New York, NY, 2010.
- [770] Á. Fialho, M. Schoenauer, and M. Sebag. **Toward comparison-based adaptive operator selection**. In M. Pelikan and J. Branke, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2010*, pages 767–774. ACM Press, New York, NY, 2010.  
*Annotation:* Proposed F-AUC and F-SR.
- [771] M. J. Fielding. **Simulated Annealing with an Optimal Fixed Temperature**. *SIAM Journal on Optimization*, 11(2):289–307, 2000.
- [772] J. E. Fieldsend, R. M. Everson, and S. Singh. **Using unconstrained elite archives for multiobjective optimization**. *IEEE Transactions on Evolutionary Computation*, 7(3):305–323, 2003.
- [773] J. R. Figueira, S. Greco, and M. Ehrgott, editors. *Multiple Criteria Decision Analysis, State of the Art Surveys*. Springer, 2005.
- [774] J. R. Figueira, C. M. Fonseca, P. Halffmann, K. Klamroth, L. Paquete, S. Ruzika, B. Schulze, M. Stiglmayr, and D. Willems. **Easy to say they are Hard, but Hard to see they are Easy-Towards a Categorization of Tractable Multiobjective Combinatorial Optimization Problems**. *Journal of Multi-Criteria Decision Analysis*, 24(1-2):82–98, 2017. doi:10.1002/mcda.1574.
- [775] R. Fikes and W. G. Lehnert, editors. *Proceedings of the 11th National Conference on Artificial Intelligence*, 1993. AAAI Press/MIT Press, Menlo Park, CA.
- [776] J. Filipe and J. Kacprzyk, editors. *Proceedings of the International Joint Conference on Computational Intelligence (IJCCI-2010)*, 2010. SciTePress.

- [777] B. Filipič and J. Šilc, editors. *Bioinspired optimization methods and their applications: Proceedings of the International Conference on Bioinspired Optimization Methods and their Applications - BIOMA 2004, 11-12 October 2004, Ljubljana, Slovenia*, 2004. URL <https://books.google.be/books?id=0ZLSAAAACAAJ>.
- [778] A. Fink and S. Voß. **HotFrame: A Heuristic Optimization Framework**. In S. Voß and D. L. Woodruff, editors, *Optimization Software Class Libraries*, pages 81–154. Kluwer Academic Publishers, Boston, MA, 2002.
- [779] M. Fischetti and A. Lodi. **Local Branching**. *Mathematical Programming Series B*, 98: 23–47, 2003.
- [780] M. Fischetti and M. Monaci. **Exploiting Erraticism in Search**. *Operations Research*, 62(1):114–122, 2014. doi:10.1287/opre.2013.1231.  
Annotation: <http://mat.tepper.cmu.edu/blog/?p=1695>.
- [781] M. Fischetti, M. Monaci, and D. Salvagnin. **Three Ideas for the Quadratic Assignment Problem**. *Operations Research*, 60(4):954–964, 2012.
- [782] B. Fisset, C. Dhaenens, and L. Jourdan. **MO-Mine<sub>clust</sub>: A Framework for Multi-objective Clustering**. In C. Dhaenens, L. Jourdan, and M.-E. Marmion, editors, *Learning and Intelligent Optimization, 9th International Conference, LION 9*, volume 8994 of *Lecture Notes in Computer Science*, pages 293–305. Springer, Heidelberg, Germany, 2015.  
Keywords: irace.
- [783] W. Fitzgibbon, Y. A. Kuznetsov, P. Neittaanmäki, and O. Pironneau, editors. *Modeling, Simulation and Optimization for Science and Technology*, volume 34 of *Computational Methods in Applied Sciences*. Springer, Netherlands, 2014.
- [784] M. Fleischer. **The Measure of Pareto Optima. Applications to Multi-objective Metaheuristics**. In C. M. Fonseca, P. J. Fleming, E. Zitzler, K. Deb, and L. Thiele, editors, *Evolutionary Multi-criterion Optimization, EMO 2003*, volume 2632 of *Lecture Notes in Computer Science*, pages 519–533. Springer, Heidelberg, Germany, 2003.
- [785] P. J. Fleming, R. C. Purshouse, and R. J. Lygoe. **Many-objective optimization: An engineering design perspective**. In C. A. Coello Coello, A. H. Aguirre, and E. Zitzler, editors, *Evolutionary Multi-criterion Optimization, EMO 2005*, volume 3410 of *Lecture Notes in Computer Science*, pages 14–32. Springer, Heidelberg, Germany, 2005.
- [786] C. Fleurent and F. Glover. **Improved constructive multistart strategies for the quadratic assignment problem using adaptive memory**. *INFORMS Journal on Computing*, 11(2):198–204, 1999.
- [787] J. Fliege. **The effects of adding objectives to an optimisation problem on the solution set**. *Operations Research Letters*, 35(6):782–790, 2007.
- [788] M. M. Flood. **The Travelling Salesman Problem**. *Operations Research*, 4:61–75, 1956.
- [789] D. Floreano and L. Keller. **Evolution of Adaptive Behaviour in Robots by Means of Darwinian Selection**. *PLoS Biology*, 8(1):e1000292, 2010. doi:10.1371/journal.pbio.1000292.

- [790] D. Floreano and F. Mondada. **Automatic creation of an autonomous agent: Genetic evolution of a neural network driven robot.** In D. Cliff, P. Husbands, J.-A. Meyer, and S. Wilson, editors, *Proceedings of the third international conference on Simulation of adaptive behavior: From Animals to Animats 3*, pages 421–430. MIT Press, Cambridge, MA, 1994.  
*Annotation:* LIS-CONF-1994-003.
- [791] D. Floreano and J. Urzelai. **Evolutionary robots with on-line self-organization and behavioral fitness.** *Neural Networks*, 13(4-5):431–443, 2000.
- [792] F. Focacci, F. Laburthe, and A. Lodi. **Local Search and Constraint Programming.** In F. Glover and G. Kochenberger, editors, *Handbook of Metaheuristics*, pages 369–403. Kluwer Academic Publishers, Norwell, MA, 2002.
- [793] F. Focacci, A. Lodi, and M. Milano. **A Hybrid Exact Algorithm for the TSPTW.** *INFORMS Journal on Computing*, 14:403–417, 2002.
- [794] T. C. Fogarty, editor. *Evolutionary Computing, AISB Workshop, Sheffield, UK, April 3-4, 1995, Selected Papers*, volume 993 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, Heidelberg, Germany, 1995.
- [795] D. B. Fogel. *Evolutionary Computation. Toward a New Philosophy of Machine Intelligence*. IEEE Press, 1995.
- [796] D. B. Fogel, A. J. Owens, and M. J. Walsh. *Artificial Intelligence Through Simulated Evolution*. John Wiley & Sons, 1966.
- [797] D. B. Fogel et al., editors. *Proceedings of the 2002 World Congress on Computational Intelligence (WCCI 2002)*, Piscataway, NJ, 2002. IEEE Press.
- [798] C. M. Fonseca and P. J. Fleming. **Genetic Algorithms for Multiobjective Optimization: Formulation, Discussion and Generalization.** In S. Forrest, editor, *ICGA*, pages 416–423. Morgan Kaufmann Publishers, 1993. ISBN 1-55860-299-2.  
*Annotation:* Proposes MOGA.
- [799] C. M. Fonseca and P. J. Fleming. **On the Performance Assessment and Comparison of Stochastic Multiobjective Optimizers.** In H.-M. Voigt et al., editors, *Parallel Problem Solving from Nature, PPSN IV*, volume 1141 of *Lecture Notes in Computer Science*, pages 584–593. Springer, Heidelberg, Germany, 1996.
- [800] C. M. Fonseca and P. J. Fleming. **Multiobjective Optimization and Multiple Constraint Handling with Evolutionary Algorithms (II): Application Example.** *IEEE Transactions on Systems, Man, and Cybernetics – Part A*, 28(1):38–44, Jan. 1998. doi:10.1109/3468.650320.
- [801] C. M. Fonseca and P. J. Fleming. **Multiobjective Optimization and Multiple Constraint Handling with Evolutionary Algorithms (I): A Unified Formulation.** *IEEE Transactions on Systems, Man, and Cybernetics – Part A*, 28(1): 26–37, Jan. 1998. doi:10.1109/3468.650319.
- [802] C. M. Fonseca, P. J. Fleming, E. Zitzler, K. Deb, and L. Thiele, editors. *Evolutionary Multi-Criterion Optimization Second International Conference, EMO 2003, Faro, Portugal, April 2003: proceedings*, volume 2632 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2003.

- [803] C. M. Fonseca, V. Grunert da Fonseca, and L. Paquete. **Exploring the Performance of Stochastic Multiobjective Optimisers with the Second-Order Attainment Function.** In C. A. Coello Coello, A. H. Aguirre, and E. Zitzler, editors, *Evolutionary Multi-criterion Optimization, EMO 2005*, volume 3410 of *Lecture Notes in Computer Science*, pages 250–264. Springer, Heidelberg, Germany, 2005. doi:10.1007/978-3-540-31880-4\_18.
- [804] C. M. Fonseca, L. Paquete, and M. López-Ibáñez. **An improved dimension-sweep algorithm for the hypervolume indicator.** In *Proceedings of the 2006 Congress on Evolutionary Computation (CEC 2006)*, pages 1157–1163. IEEE Press, Piscataway, NJ, July 2006. doi:10.1109/CEC.2006.1688440.
- [805] C. M. Fonseca, A. P. Guerreiro, M. López-Ibáñez, and L. Paquete. **On the Computation of the Empirical Attainment Function.** In R. H. C. Takahashi et al., editors, *Evolutionary Multi-criterion Optimization, EMO 2011*, volume 6576 of *Lecture Notes in Computer Science*, pages 106–120. Springer, Heidelberg, Germany, 2011. doi:10.1007/978-3-642-19893-9\_8.
- [806] S. Forrest, editor. *Proceedings of the 5th International Conference on Genetic Algorithms, Urbana-Champaign, IL, USA, June 1993*. Morgan Kaufmann Publishers, 1993. ISBN 1-55860-299-2.
- [807] M. Förster, B. Bickel, B. Hardung, and G. Kókai. **Self-adaptive ant colony optimisation applied to function allocation in vehicle networks.** In D. Thierens et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2007*, pages 1991–1998. ACM Press, New York, NY, 2007.
- [808] R. Fourer, D. M. Gay, and B. W. Kernighan. *AMPL: A Modeling Language for Mathematical Programming*. Duxbury, 2 edition, 2002.
- [809] B. L. Fox. **Uniting probabilistic methods for optimization.** In *Proceedings of the 24th conference on Winter simulation*, pages 500–505. ACM, 1992.
- [810] B. L. Fox. **Integrating and accelerating tabu search, simulated annealing, and genetic algorithms.** *Annals of Operations Research*, 41(2):47–67, 1993.
- [811] B. L. Fox. **Simulated annealing: folklore, facts, and directions.** In *Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing*, pages 17–48. Springer, 1995.
- [812] M. Fox and D. Poole, editors. *Proceedings of the Twenty-Fourth AAAI Conference on Artificial Intelligence, AAAI 2010, Atlanta, Georgia, USA, July 11-15, 2010*. AAAI Press, 2010.
- [813] J. M. Framiñán, J. N. Gupta, and R. Leisten. **A Review and Classification of Heuristics for Permutation Flow-shop Scheduling with Makespan Objective.** *Journal of the Operational Research Society*, 55(12):1243–1255, 2004.
- [814] J. M. Framiñán, R. Leisten, and R. Ruiz. *Manufacturing Scheduling Systems: An Integrated View on Models, Methods, and Tools*. Springer, New York, NY, 2014.
- [815] G. Francesca, M. Brambilla, A. Brutschy, V. Trianni, and M. Birattari. **AutoMoDe: A Novel Approach to the Automatic Design of Control Software for Robot Swarms.** *Swarm Intelligence*, 8(2):89–112, 2014. doi:10.1007/s11721-014-0092-4.

- [816] G. Francesca, M. Brambilla, A. Brutschy, L. Garattoni, R. Miletitch, G. Podevijn, A. Reina, T. Soleymani, M. Salvaro, C. Pincioli, F. Mascia, V. Trianni, and M. Birattari. **AutoMoDe-Chocolate: Automatic Design of Control Software for Robot Swarms**. *Swarm Intelligence*, 2015. doi:10.1007/s11721-015-0107-9.  
*Keywords:* Swarm robotics; Automatic design; AutoMoDe.
- [817] A. Franzin and T. Stützle. **Exploration of Metaheuristics through Automatic Algorithm Configuration Techniques and Algorithmic Frameworks**. In T. Friedrich, F. Neumann, and A. M. Sutton, editors, *GECCO (Companion)*, pages 1341–1347. ACM Press, New York, NY, 2016.
- [818] A. Franzin and T. Stützle. **Revisiting Simulated Annealing: a Component-Based Analysis: Supplementary Material**. <http://iridia.ulb.ac.be/supp/IridiaSupp2018-001>, 2018.
- [819] A. Franzin and T. Stützle. **Revisiting Simulated Annealing: a Component-Based Analysis**. Technical Report TR/IRIDIA/2018-010, IRIDIA, Université Libre de Bruxelles, Belgium, 2018. URL <http://iridia.ulb.ac.be/IridiaTrSeries/IridiaTr2018-010.pdf>.
- [820] A. Franzin and T. Stützle. **Revisiting simulated annealing: A component-based analysis**. *Computers & Operations Research*, 104:191 – 206, 2019. doi:10.1016/j.cor.2018.12.015.
- [821] A. Franzin, L. Pérez Cáceres, and T. Stützle. **Effect of Transformations of Numerical Parameters in Automatic Algorithm Configuration**. Technical Report TR/IRIDIA/2017-006, IRIDIA, Université Libre de Bruxelles, Belgium, Mar. 2017. URL <http://iridia.ulb.ac.be/IridiaTrSeries/link/IridiaTr2017-006.pdf>.
- [822] A. Franzin, L. Pérez Cáceres, and T. Stützle. **Effect of Transformations of Numerical Parameters in Automatic Algorithm Configuration**. *Optimization Letters*, 2018. doi:10.1007/s11590-018-1240-3. To appear.
- [823] C. B. Fraser. *Subsequences and Supersequences of Strings*. PhD thesis, University of Glasgow, 1995.
- [824] B. Freisleben and P. Merz. **A Genetic Local Search Algorithm for Solving Symmetric and Asymmetric Traveling Salesman Problems**. In T. Bäck, T. Fukuda, and Z. Michalewicz, editors, *Proceedings of the 1996 IEEE International Conference on Evolutionary Computation (ICEC'96)*, pages 616–621, Piscataway, NJ, 1996. IEEE Press.
- [825] M. Friedman. **The use of ranks to avoid the assumption of normality implicit in the analysis of variance**. *Journal of the American Statistical Association*, 32(200): 675–701, 1937.
- [826] T. Friedrich, T. Kötzing, M. S. Krejca, and A. M. Sutton. **Robustness of Ant Colony Optimization to Noise**. In S. Silva and A. I. Esparcia-Alcázar, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2015*, pages 17–24. ACM Press, New York, NY, 2015. doi:10.1145/2739480.2754723.  
*Keywords:* ant colony optimization, noisy fitness, run time analysis, theory.

- [827] T. Friedrich, F. Neumann, and A. M. Sutton, editors. *Genetic and Evolutionary Computation Conference, GECCO 2016, Proceedings, Denver, CO, USA, July 20-24, 2016*. ACM Press, New York, NY, 2016.
- [828] T. Friedrich, F. Neumann, and A. M. Sutton, editors. *Genetic and Evolutionary Computation Conference, GECCO 2016, Denver, CO, USA, July 20-24, 2016, Companion Material Proceedings*. ACM Press, New York, NY, 2016.
- [829] T. Friedrich, T. Kötzing, and M. Wagner. **A Generic Bet-and-Run Strategy for Speeding Up Stochastic Local Search**. In S. P. Singh and S. Markovitch, editors, *AAAI Conference on Artificial Intelligence*, pages 801–807. AAAI Press, Feb. 2017.
- [830] T. Friedrich, A. Göbel, F. Quinzan, and M. Wagner. **Heavy-Tailed Mutation Operators in Single-Objective Combinatorial Optimization**. In A. Auger, C. M. Fonseca, N. Lourenço, P. Machado, L. Paquete, and D. Whitley, editors, *Parallel Problem Solving from Nature - PPSN XV*, volume 11101 of *Lecture Notes in Computer Science*, pages 134–145. Springer, Cham, 2018.
- [831] T. Friedrich, F. Quinzan, and M. Wagner. **Escaping Large Deceptive Basins of Attraction with Heavy-tailed Mutation Operators**. In H. E. Aguirre and K. Takadama, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2018*, pages 293–300. ACM Press, New York, NY, 2018. [doi:10.1145/3205455.3205515](https://doi.org/10.1145/3205455.3205515).  
*Keywords:* combinatorial optimization, heavy-tailed mutation, single-objective optimization, experiments-motivated theory, irace.
- [832] M. Friendly. **Statistical graphics for multivariate data**. In *SAS Conference Proceedings: SAS Users Group International 16 (SUGI 16)*, 1991.  
*Annotation:* February 17-20, 1991, New Orleans, Louisiana, 297 papers.
- [833] M. Frigo and S. G. Johnson. **The Design and Implementation of FFTW3**. *Proceedings of the IEEE*, 93(2):216–231, 2005. Special issue on “Program Generation, Optimization, and Platform Adaptation”.
- [834] H. Frikha, H. Chabchoub, and J.-M. Martel. **Inferring criteria’s relative importance coefficients in PROMETHEE II**. *International Journal of Operational Research*, 7(2):257–275, 2010.
- [835] Z. Fu, R. Eglese, and L. Y. O. Li. **A unified tabu search algorithm for vehicle routing problems with soft time windows**. *Journal of the Operational Research Society*, 59(5):663–673, 2008.
- [836] D. Fudenberg and J. Tirole. *Game Theory*. MIT Press, Cambridge, MA, 1983.
- [837] G. Fuellerer, K. F. Doerner, R. F. Hartl, and M. Iori. **Metaheuristics for vehicle routing problems with three-dimensional loading constraints**. *European Journal of Operational Research*, 201(3):751–759, 2009. [doi:10.1016/j.ejor.2009.03.046](https://doi.org/10.1016/j.ejor.2009.03.046).
- [838] G. Fuellerer, K. F. Doerner, R. F. Hartl, and M. Iori. **Ant colony optimization for the two-dimensional loading vehicle routing problem**. *Computers & Operations Research*, 36(3):655–673, 2009.



- [839] A. S. Fukunaga. **Evolving Local Search Heuristics for SAT Using Genetic Programming.** In K. Deb et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2004, Part II*, volume 3103 of *Lecture Notes in Computer Science*, pages 483–494. Springer, Heidelberg, Germany, 2004.
- [840] A. S. Fukunaga. **Automated Discovery of Local Search Heuristics for Satisfiability Testing.** *Evolutionary Computation*, 16(1):31–61, Mar. 2008. doi:[10.1162/evco.2008.16.1.31](https://doi.org/10.1162/evco.2008.16.1.31).
- [841] N. E. Furlong, E. A. Lovelace, and K. L. Lovelace. *Research Methods and Statistics: An Integrated Approach*. Harcourt College Publishers, 2000.
- [842] J. Fürnkranz and T. Joachims, editors. *Proceedings of the 27th international conference on machine learning (ICML-10)*, 2010. ACM Press, New York, NY.
- [843] G. Fursin, Y. Kashnikov, A. W. Memon, Z. Chamski, O. Temam, M. Namolaru, E. Yom-Tov, B. Mendelson, A. Zaks, E. Courtois, F. Bodin, P. Barnard, E. Ashton, E. Bonilla, J. Thomson, C. K. I. Williams, and M. O’Boyle. **Milepost GCC: Machine Learning Enabled Self-tuning Compiler.** *International Journal of Parallel Programming*, 39(3):296–327, 2011. doi:[10.1007/s10766-010-0161-2](https://doi.org/10.1007/s10766-010-0161-2).
- [844] D. Gaertner and K. Clark. **On Optimal Parameters for Ant Colony Optimization Algorithms.** In H. R. Arabnia and R. Joshua, editors, *Proceedings of the 2005 International Conference on Artificial Intelligence, ICAI 2005*, pages 83–89. CSREA Press, 2005. ISBN 1-932415-66-1.
- [845] M. Gagliolo and C. Legrand. **Algorithm Survival Analysis.** In T. Bartz-Beielstein, M. Chiarandini, L. Paquete, and M. Preuss, editors, *Experimental Methods for the Analysis of Optimization Algorithms*, pages 161–184. Springer, Berlin, Germany, 2010. doi:[10.1007/978-3-642-02538-9\\_7](https://doi.org/10.1007/978-3-642-02538-9_7).
- [846] C. Gagné, W. L. Price, and M. Gravel. **Comparing an ACO algorithm with other heuristics for the single machine scheduling problem with sequence-dependent setup times.** *Journal of the Operational Research Society*, 53:895–906, 2002.
- [847] P. Galinier and J.-K. Hao. **Hybrid evolutionary algorithms for graph coloring.** *Journal of Combinatorial Optimization*, 3(4):379–397, 1999.
- [848] L. M. Gambardella and M. Dorigo. **Ant-Q: A Reinforcement Learning Approach to the Traveling Salesman Problem.** In A. Prieditis and S. Russell, editors, *Proceedings of the Twelfth International Conference on Machine Learning (ML-95)*, pages 252–260. Morgan Kaufmann Publishers, Palo Alto, CA, 1995.
- [849] L. M. Gambardella and M. Dorigo. **Solving Symmetric and Asymmetric TSPs by Ant Colonies.** In T. Bäck, T. Fukuda, and Z. Michalewicz, editors, *Proceedings of the 1996 IEEE International Conference on Evolutionary Computation (ICEC’96)*, pages 622–627, Piscataway, NJ, 1996. IEEE Press.
- [850] L. M. Gambardella and M. Dorigo. **Ant Colony System Hybridized with a New Local Search for the Sequential Ordering Problem.** *INFORMS Journal on Computing*, 12(3):237–255, 2000.

- [851] L. M. Gambardella, É. D. Taillard, and G. Agazzi. **MACS-VRPTW: A Multiple Ant Colony System for Vehicle Routing Problems with Time Windows**. In D. Corne, M. Dorigo, and F. Glover, editors, *New Ideas in Optimization*, pages 63–76. McGraw Hill, London, UK, 1999.
- [852] L. M. Gambardella, R. Montemanni, and D. Weyland. **Coupling Ant Colony Systems with Strong Local Searches**. *European Journal of Operational Research*, 220(3): 831–843, 2012. doi:10.1016/j.ejor.2012.02.038.
- [853] X. Gandibleux, N. Mezdaoui, and A. Fréville. **A tabu search procedure to solve multiobjective combinatorial optimization problem**. In R. Caballero, F. Ruiz, and R. Steuer, editors, *Advances in Multiple Objective and Goal Programming*, volume 455 of *Lecture Notes in Economics and Mathematical Systems*, pages 291–300. Springer, Heidelberg, Germany, 1997.
- [854] X. Gandibleux, A. Jaskiewicz, A. Fréville, and R. Słowiński. **Special Issue on Multiple Objective Metaheuristics**. *Journal of Heuristics*, 6(3), 2000.
- [855] X. Gandibleux, H. Morita, and N. Katoh. **Use of a genetic heritage for solving the assignment problem with two objectives**. In C. M. Fonseca, P. J. Fleming, E. Zitzler, K. Deb, and L. Thiele, editors, *Evolutionary Multi-criterion Optimization, EMO 2003*, volume 2632 of *Lecture Notes in Computer Science*, pages 43–57. Springer, Heidelberg, Germany, 2003.
- [856] X. Gandibleux, X. Delorme, and V. T’Kindt. **An Ant Colony Optimisation Algorithm for the Set Packing Problem**. In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 4th International Workshop, ANTS 2004*, volume 3172 of *Lecture Notes in Computer Science*, pages 49–60. Springer, Heidelberg, Germany, 2004.
- [857] X. Gandibleux, M. Sevaux, K. Sörensen, and V. T’Kindt, editors. *Metaheuristics for Multiobjective Optimisation*, volume 535 of *Lecture Notes in Economics and Mathematical Systems*. Springer, Berlin, Germany, 2004.
- [858] H. Gao, H. Nie, and K. Li. **Visualisation of Pareto Front Approximation: A Short Survey and Empirical Comparisons**. *Arxiv preprint arXiv:1903.01768*, 2019.
- [859] K. Gao, Y. Zhang, A. Sadollah, and R. Su. **Optimizing urban traffic light scheduling problem using harmony search with ensemble of local search**. *Applied Soft Computing*, 48:359–372, Nov. 2016. doi:10.1016/j.asoc.2016.07.029.  
*Keywords:* harmony search algorithm, traffic light scheduling.
- [860] S. García, A. Fernández, J. Luengo, and F. Herrera. **Advanced nonparametric tests for multiple comparisons in the design of experiments in computational intelligence and data mining: Experimental analysis of power**. *Information Sciences*, 180(10):2044–2064, 2010.
- [861] C. García-Martínez, O. Cordón, and F. Herrera. **A taxonomy and an empirical analysis of multiple objective ant colony optimization algorithms for the bi-criteria TSP**. *European Journal of Operational Research*, 180(1):116–148, 2007.
- [862] C. García-Martínez, F. J. Rodríguez, and M. Lozano. **Arbitrary function optimisation with metaheuristics: No free lunch and real-world problems**. *Soft Computing*, 16(12):2115–2133, 2012. doi:10.1007/s00500-012-0881-x.

- [863] C. García-Martínez, F. Glover, F. J. Rodríguez, M. Lozano, and R. Martí. **Strategic Oscillation for the Quadratic Multiple Knapsack Problem.** *Computational Optimization and Applications*, 58(1):161–185, 2014.
- [864] C. García-Martínez, F. J. Rodríguez, and M. Lozano. **Tabu-enhanced Iterated Greedy Algorithm: A Case Study in the Quadratic Multiple Knapsack Problem.** *European Journal of Operational Research*, 232(3):454–463, 2014.
- [865] J. García-Nieto, E. Alba, and A. C. Olivera. **Swarm intelligence for traffic light scheduling: Application to real urban areas.** *Engineering Applications of Artificial Intelligence*, 25(2):274–283, Mar. 2012.  
*Keywords:* Cycle program optimization, Particle swarm optimization, Realistic traffic instances, SUMO microscopic simulator of urban mobility, Traffic light scheduling.
- [866] J. García-Nieto, A. C. Olivera, and E. Alba. **Optimal Cycle Program of Traffic Lights With Particle Swarm Optimization.** *IEEE Transactions on Evolutionary Computation*, 17(6):823–839, Dec. 2013. doi:10.1109/TEVC.2013.2260755.
- [867] M. R. Garey and D. S. Johnson. *Computers and Intractability: A Guide to the Theory of NP-Completeness.* Freeman & Co, San Francisco, CA, 1979.
- [868] M. R. Garey, D. S. Johnson, and R. Sethi. **The Complexity of Flowshop and Jobshop Scheduling.** *Mathematics of Operations Research*, 1:117–129, 1976.
- [869] I. I. Garibay, T. Jansen, R. P. Wiegand, and A. S. Wu, editors. *Foundations of Genetic Algorithms, 10th ACM SIGEVO International Workshop, FOGA 2009, Orlando, Florida, USA, January 9-11, 2009, Proceedings.* ACM, 2009. ISBN 978-1-60558-414-0.
- [870] D. Garrett and D. Dasgupta. **Multiobjective landscape analysis and the generalized assignment problem.** In V. Maniezzo, R. Battiti, and J.-P. Watson, editors, *Learning and Intelligent Optimization, Second International Conference, LION 2*, volume 5313 of *Lecture Notes in Computer Science*, pages 110–124. Springer, Heidelberg, Germany, 2008.
- [871] B. A. Garro, H. Sossa, and R. A. Vazquez. **Evolving ant colony system for optimizing path planning in mobile robots.** In *Electronics, Robotics and Automotive Mechanics Conference*, pages 444–449, Los Alamitos, CA, 2007. IEEE Computer Society. doi:10.1109/CERMA.2007.60.
- [872] A. Gaspar-Cunha, C. H. Antunes, and C. A. Coello Coello, editors. *Evolutionary Multi-Criterion Optimization – 8th International Conference, EMO 2015, Guimarães, Portugal, March 29 – April 1, 2015. Proceedings, Part I*, volume 9018 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2015.
- [873] A. Gaspar-Cunha, C. H. Antunes, and C. A. Coello Coello, editors. *Evolutionary Multi-Criterion Optimization – 8th International Conference, EMO 2015, Guimarães, Portugal, March 29 – April 1, 2015. Proceedings, Part II*, volume 9019 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2015.
- [874] M. Gebser, R. Kaminski, B. Kaufmann, T. Schaub, M. T. Schneider, and S. Ziller. **A portfolio solver for answer set programming: Preliminary report.** In P. Calabar and T. C. Son, editors, *Logic Programming and Nonmonotonic Reasoning*, volume 8148 of *Lecture Notes in Artificial Intelligence*, pages 352–357. Springer, Heidelberg, Germany, 2013.

- [875] M. J. Geiger. **Decision Support for Multi-objective Flow Shop Scheduling by the Pareto Iterated Local Search Methodology.** *Computers and Industrial Engineering*, 61(3):805–812, 2011.
- [876] M. J. Geiger. **A Multi-threaded Local Search Algorithm and Computer Implementation for the Multi-mode, Resource-constrained Multi-project Scheduling Problem.** *European Journal of Operational Research*, 256:729–741, 2017.
- [877] S. Geman and D. Geman. **Stochastic Relaxation, Gibbs Distributions, and the Bayesian Restoration of Images.** *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 6(6):721–741, 1984.
- [878] M. Gen and L. Lin. **Multiobjective evolutionary algorithm for manufacturing scheduling problems: state-of-the-art survey.** *Journal of Intelligent Manufacturing*, 25(5):849–866, 2014.
- [879] M. Gendreau and J.-Y. Potvin. **Tabu Search.** In M. Gendreau and J.-Y. Potvin, editors, *Handbook of Metaheuristics*, volume 146 of *International Series in Operations Research & Management Science*, pages 41–59. Springer, New York, NY, 2 edition, 2010.
- [880] M. Gendreau and J.-Y. Potvin, editors. *Handbook of Metaheuristics*, volume 146 of *International Series in Operations Research & Management Science*. Springer, New York, NY, 2 edition, 2010.
- [881] M. Gendreau and J.-Y. Potvin, editors. *Handbook of Metaheuristics*, volume 272 of *International Series in Operations Research & Management Science*. Springer, 2019.
- [882] M. Gendreau, A. Hertz, G. Laporte, and M. Stan. **A Generalized Insertion Heuristic for the Traveling Salesman Problem with Time Windows.** *Operations Research*, 46:330–335, 1998.
- [883] M. Gendreau, F. Guertin, J.-Y. Potvin, and É. D. Taillard. **Parallel tabu search for real-time vehicle routing and dispatching.** *Transportation Science*, 33(4):381–390, 1999.
- [884] M. Gendreau, F. Guertin, J.-Y. Potvin, and R. Séguin. **Neighborhood search heuristics for a dynamic vehicle dispatching problem with pick-ups and deliveries.** *Transportation Research Part C: Emerging Technologies*, 14(3):157–174, 2006.
- [885] I. P. Gent, editor. *Principles and Practice of Constraint Programming – CP 2009, 15th International Conference, CP 2009, Lisbon, Portugal, September 20–24, 2009, Proceedings*, volume 5732 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2009. doi:10.1007/978-3-642-04244-7.
- [886] I. P. Gent, S. A. Grant, E. MacIntyre, P. Prosser, P. Shaw, B. M. Smith, and T. Walsh. **How Not To Do It.** Technical Report 97.27, School of Computer Studies, University of Leeds, May 1997.
- [887] R. Genuer, J.-M. Poggi, and C. Tuleau-Malot. **Variable selection using random forests.** *Pattern Recognition Letters*, 31(14):2225–2236, 2010.
- [888] S. J. Gershman, E. J. Horvitz, and J. B. Tenenbaum. **Computational rationality: A converging paradigm for intelligence in brains, minds, and machines.** *Science*, 349(6245):273–278, 2015. doi:10.1126/science.aac6076.

- [889] D. Geschwender, F. Hutter, L. Kotthoff, Y. Malitsky, H. H. Hoos, and K. Leyton-Brown. **Algorithm Configuration in the Cloud: A Feasibility Study**. In P. M. Pardalos, M. G. C. Resende, C. Vogiatzis, and J. L. Walteros, editors, *Learning and Intelligent Optimization, 8th International Conference, LION 8*, volume 8426 of *Lecture Notes in Computer Science*, pages 41–46. Springer, Heidelberg, Germany, 2014. doi:10.1007/978-3-319-09584-4\_5.
- [890] S. Ghemawat, H. Gobioff, and S.-T. Leung. **The Google File System**. *SIGOPS Oper. Syst. Rev.*, 37(5):29–43, 2003.
- [891] K. Ghoseiri and B. Nadjari. **An ant colony optimization algorithm for the bi-objective shortest path problem**. *Applied Soft Computing*, 10(4):1237–1246, 2010.
- [892] K. C. Giannakoglou, D. T. Tsahalis, J. Periaux, K. D. Papaliliou, and T. Fogarty, editors. *Evolutionary Methods for Design, Optimisation and Control with Application to Industrial Problems. Proceedings of the EUROGEN 2001 Conference*, 2002. CIMNE, Barcelona, Spain.
- [893] M. S. Gibbs, G. C. Dandy, H. R. Maier, and J. B. Nixon. **Calibrating genetic algorithms for water distribution system optimisation**. In *7th Annual Symposium on Water Distribution Systems Analysis*. ASCE, May 2005.
- [894] X. Glorot and Y. Bengio. **Understanding the difficulty of training deep feedforward neural networks**. In *Proceedings of the Thirteenth International Conference on Artificial Intelligence and Statistics*, pages 249–256, 2010.
- [895] F. Glover. **Heuristics for Integer Programming Using Surrogate Constraints**. *Decision Sciences*, 8:156–166, 1977.
- [896] F. Glover. **Future Paths for Integer Programming and Links to Artificial Intelligence**. *Computers & Operations Research*, 13(5):533–549, 1986.
- [897] F. Glover. **Tabu Search – Part I**. *INFORMS Journal on Computing*, 1(3):190–206, 1989. doi:10.1287/ijoc.1.3.190.
- [898] F. Glover. **Tabu Search – Part II**. *INFORMS Journal on Computing*, 2(1):4–32, 1990.
- [899] F. Glover. **A Template for Scatter Search and Path Relinking**. In J.-K. Hao, E. Lutton, E. M. A. Ronald, M. Schoenauer, and D. Snyers, editors, *Artificial Evolution*, volume 1363 of *Lecture Notes in Computer Science*, pages 1–51. Springer, Heidelberg, Germany, 1998. doi:10.1007/BFb0026589.
- [900] F. Glover and G. Kochenberger, editors. *Handbook of Metaheuristics*. Kluwer Academic Publishers, Norwell, MA, 2002.
- [901] F. Glover and G. A. Kochenberger. **Critical Even Tabu Search for Multidimensional Knapsack Problems**. In I. H. Osman and J. P. Kelly, editors, *Metaheuristics: Theory & Applications*, pages 407–427. Kluwer Academic Publishers, Norwell, MA, 1996.
- [902] F. Glover and M. Laguna. *Tabu Search*. Kluwer Academic Publishers, Boston, MA, USA, 1997.
- [903] F. Glover, G. A. Kochenberger, and B. Alidaee. **Adaptive Memory Tabu Search for Binary Quadratic Programs**. *Management Science*, 44(3):336–345, 1998.



- [904] F. Glover, M. Laguna, and R. Martí. **Scatter Search and Path Relinking: Advances and Applications**. In F. Glover and G. Kochenberger, editors, *Handbook of Metaheuristics*, pages 1–35. Kluwer Academic Publishers, Norwell, MA, 2002.
- [905] GNU Project, Free Software Foundation. **GCC, the GNU Compiler Collection**. <https://www.gnu.org>, 1987.
- [906] E. F. G. Goldberg, G. R. Souza, and M. C. Goldberg. **Particle Swarm for the Traveling Salesman Problem**. In J. Gottlieb and G. R. Raidl, editors, *Proceedings of EvoCOP 2006 – 6th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 3906 of *Lecture Notes in Computer Science*, pages 99–110. Springer, Heidelberg, Germany, 2006.
- [907] D. E. Goldberg. *Genetic Algorithms in Search, Optimization and Machine Learning*. Addison-Wesley, Boston, MA, USA, 1989.
- [908] D. E. Goldberg. **Probability matching, the magnitude of reinforcement, and classifier system bidding**. *Machine Learning*, 5(4):407–425, 1990.
- [909] F. E. Goldman and L. W. Mays. **The Application of Simulated Annealing to the Optimal Operation of Water Systems**. In *Proceedings of 26th Annual Water Resources Planning and Management Conference*, Tempe, USA, June 2000. ASCE.
- [910] W. Gong, Á. Fialho, and Z. Cai. **Adaptive strategy selection in differential evolution**. In M. Pelikan and J. Branke, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2010*, pages 409–416. ACM Press, New York, NY, 2010. doi:10.1145/1830483.1830559.
- [911] E. D. Goodman, editor. *Proceedings of the 3rd Annual Conference on Genetic and Evolutionary Computation, GECCO 2001*. Morgan Kaufmann Publishers, San Francisco, CA, 2001.
- [912] Google. **TensorFlow**. <https://www.tensorflow.org>, 2017.
- [913] M. Gorges-Schleuter. **Asparagos96 and the Travelling Salesman Problem**. In T. Bäck, Z. Michalewicz, and X. Yao, editors, *Proceedings of the 1997 IEEE International Conference on Evolutionary Computation (ICEC’97)*, pages 171–174, Piscataway, NJ, 1997. IEEE Press.
- [914] J. Gottlieb and G. R. Raidl, editors. *Proceedings of EvoCOP 2006 – 6th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 3906 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2006.
- [915] J. Gottlieb, M. Puchta, and C. Solnon. **A Study of Greedy, Local Search, and Ant Colony Optimization Approaches for Car Sequencing Problems**. In S. Cagnoni et al., editors, *Applications of Evolutionary Computing, Proceedings of EvoWorkshops 2003*, volume 2611 of *Lecture Notes in Computer Science*, pages 246–257. Springer, Heidelberg, Germany, 2003.
- [916] N. I. M. Gould, D. Orban, and P. L. Toint. **CUTer and SifDec: A constrained and unconstrained testing environment, revisited**. *ACM Transactions on Mathematical Software*, 29:373–394, 2003.



- [917] A. Grasas, A. A. Juan, and H. Ramalhinho Lourenço. **SimILS: A Simulation-based Extension of the Iterated Local Search Metaheuristic for Stochastic Combinatorial Optimization.** *Journal of Simulation*, 10(1):69–77, 2016.
- [918] M. Gravel, W. L. Price, and C. Gagné. **Scheduling continuous casting of aluminum using a multiple objective ant colony optimization metaheuristic.** *European Journal of Operational Research*, 143(1):218–229, 2002. doi:[10.1016/S0377-2217\(01\)00329-0](https://doi.org/10.1016/S0377-2217(01)00329-0).
- [919] A. Graves, A.-r. Mohamed, and G. Hinton. **Speech recognition with deep recurrent neural networks.** In *Acoustics, speech and signal processing (icassp), 2013 ieee international conference on*, pages 6645–6649. IEEE, 2013.
- [920] S. Greco, B. Matarazzo, and R. Słowiński. **Interactive evolutionary multiobjective optimization using dominance-based rough set approach.** In H. Ishibuchi et al., editors, *Proceedings of the 2010 Congress on Evolutionary Computation (CEC 2010)*, pages 1–8. IEEE Press, Piscataway, NJ, 2010.
- [921] S. Greco, M. Kadzinski, V. Mousseau, and R. Słowiński. **ELECTRE<sup>GKMS</sup>: Robust ordinal regression for outranking methods.** *European Journal of Operational Research*, 214(1):118–135, 2011.
- [922] S. Greco, J. D. Knowles, K. Miettinen, and E. Zitzler, editors. *Learning in Multiobjective Optimization (Dagstuhl Seminar 12041)*, volume 2(1) of *Dagstuhl Reports*. Schloss Dagstuhl–Leibniz-Zentrum für Informatik, Germany, 2012. doi:[10.4230/DagRep.2.1.50](https://doi.org/10.4230/DagRep.2.1.50).
- [923] S. Greco, V. Mousseau, and R. Słowiński. **Robust ordinal regression for value functions handling interacting criteria.** *European Journal of Operational Research*, 239(3):711–730, 2014. doi:[10.1016/j.ejor.2014.05.022](https://doi.org/10.1016/j.ejor.2014.05.022).
- [924] S. Greco, K. Klamroth, J. D. Knowles, and G. Rudolph, editors. *Understanding Complexity in Multiobjective Optimization (Dagstuhl Seminar 15031)*, volume 5(1) of *Dagstuhl Reports*. Schloss Dagstuhl–Leibniz-Zentrum für Informatik, Germany, 2015. doi:[10.4230/DagRep.5.1.96](https://doi.org/10.4230/DagRep.5.1.96).  
*Keywords:* multiple criteria decision making, evolutionary multiobjective optimization.
- [925] G. W. Greenwood, X. Hu, and J. G. D’Ambrosio. **Fitness functions for multiple objective optimization problems: Combining preferences with Pareto rankings.** In R. K. Belew and M. D. Vose, editors, *Foundations of Genetic Algorithms (FOGA)*, pages 437–455. Morgan Kaufmann Publishers, 1996.
- [926] J. J. Grefenstette, editor. *Proceedings of the 1st International Conference on Genetic Algorithms, Pittsburgh, PA, USA, July 1985*, 1985. Lawrence Erlbaum Associates. ISBN 0-8058-0426-9.
- [927] J. J. Grefenstette. **Optimization of Control Parameters for Genetic Algorithms.** *IEEE Transactions on Systems, Man, and Cybernetics*, 16(1):122–128, 1986.
- [928] A. Grosso, F. Della Croce, and R. Tadei. **An Enhanced Dynasearch Neighborhood for the Single-Machine Total Weighted Tardiness Scheduling Problem.** *Operations Research Letters*, 32(1):68–72, 2004.

- [929] A. Grosso, A. R. M. J. U. Jamali, and M. Locatelli. **Finding Maximin Latin Hypercube Designs by Iterated Local Search Heuristics.** *European Journal of Operational Research*, 197(2):541–547, 2009.
- [930] P. Groves, B. Kayyali, D. Knott, and S. Van Kuiken. **The "big data" revolution in healthcare.** *McKinsey Quarterly*, 2, 2013.
- [931] V. Grunert da Fonseca and C. M. Fonseca. **A link between the multivariate cumulative distribution function and the hitting function for random closed sets.** *Statistics & Probability Letters*, 57(2):179–182, 2002.
- [932] V. Grunert da Fonseca and C. M. Fonseca. **A characterization of the outcomes of stochastic multiobjective optimizers through a reduction of the hitting function test sets.** Technical report, CSI, Universidade do Algarve, 2004.  
*Keywords:* high-order EAF.
- [933] V. Grunert da Fonseca and C. M. Fonseca. **The Attainment-Function Approach to Stochastic Multiobjective Optimizer Assessment and Comparison.** In T. Bartz-Beielstein, M. Chiarandini, L. Paquete, and M. Preuss, editors, *Experimental Methods for the Analysis of Optimization Algorithms*, pages 103–130. Springer, Berlin, Germany, 2010.
- [934] V. Grunert da Fonseca and C. M. Fonseca. **The Relationship between the Covered Fraction, Completeness and Hypervolume Indicators.** In J.-K. Hao, P. Legrand, P. Collet, N. Monmarché, E. Lutton, and M. Schoenauer, editors, *Artificial Evolution: 10th International Conference, Evolution Artificielle, EA, 2011*, volume 7401 of *Lecture Notes in Computer Science*, pages 25–36. Springer, Heidelberg, Germany, 2012.
- [935] V. Grunert da Fonseca, C. M. Fonseca, and A. O. Hall. **Inferential Performance Assessment of Stochastic Optimisers and the Attainment Function.** In E. Zitzler, K. Deb, L. Thiele, C. A. Coello Coello, and D. Corne, editors, *Evolutionary Multi-criterion Optimization, EMO 2001*, volume 1993 of *Lecture Notes in Computer Science*, pages 213–225. Springer, Heidelberg, Germany, 2001. doi:10.1007/3-540-44719-9\_15.  
*Keywords:* EAF.  
*Annotation:* Proposed looking at anytime behavior as a multi-objective problem.
- [936] C. Guéret, N. Monmarché, and M. Slimane. **Ants Can Play Music.** In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 4th International Workshop, ANTS 2004*, volume 3172 of *Lecture Notes in Computer Science*, pages 310–317. Springer, Heidelberg, Germany, 2004.
- [937] A. Gunawan, K. M. Ng, and K. L. Poh. **A Hybridized Lagrangian Relaxation and Simulated Annealing Method for the Course Timetabling Problem.** *Computers & Operations Research*, 39(12):3074–3088, 2012.
- [938] M. Guntsch and J. Branke. **New Ideas for Applying Ant Colony Optimization to the Probabilistic TSP.** In S. Cagnoni et al., editors, *Applications of Evolutionary Computing, Proceedings of EvoWorkshops 2003*, volume 2611 of *Lecture Notes in Computer Science*, pages 165–175. Springer, Heidelberg, Germany, 2003.
- [939] M. Guntsch and M. Middendorf. **Pheromone Modification Strategies for Ant Algorithms Applied to Dynamic TSP.** In E. J. W. Boers et al., editors, *Applications of Evolutionary Computing, Proceedings of EvoWorkshops 2001*, volume 2037 of *Lecture Notes in Computer Science*, pages 213–222. Springer, Heidelberg, Germany, 2001.

- [940] M. Guntsch and M. Middendorf. **A Population Based Approach for ACO**. In S. Cagnoni et al., editors, *Applications of Evolutionary Computing, Proceedings of EvoWorkshops 2002*, volume 2279 of *Lecture Notes in Computer Science*, pages 71–80. Springer, Heidelberg, Germany, 2002.
- [941] M. Guntsch and M. Middendorf. **Applying Population Based ACO to Dynamic Optimization Problems**. In M. Dorigo et al., editors, *Ant Algorithms, Third International Workshop, ANTS 2002*, volume 2463 of *Lecture Notes in Computer Science*, pages 111–122. Springer, Heidelberg, Germany, 2002.
- [942] M. Guntsch and M. Middendorf. **Solving Multi-Objective Permutation Problems with Population Based ACO**. In C. M. Fonseca, P. J. Fleming, E. Zitzler, K. Deb, and L. Thiele, editors, *Evolutionary Multi-criterion Optimization, EMO 2003*, volume 2632 of *Lecture Notes in Computer Science*, pages 464–478. Springer, Heidelberg, Germany, 2003.
- [943] J. N. D. Gupta. **Flowshop schedules with sequence dependent setup times**. *Journal of Operations Research Society of Japan*, 29:206 – 219, 1986.
- [944] Gurobi. **Gurobi Optimizer**. <http://www.gurobi.com/products/gurobi-optimizer>, 2017.
- [945] D. Gusfield. **Algorithms on Strings, Trees, and Sequences**. In *Computer Science and Computational Biology*. Cambridge University Press, 1997.
- [946] G. Gutin and A. Punnen, editors. *The Traveling Salesman Problem and its Variations*. Kluwer Academic Publishers, Dordrecht, The Netherlands, 2002.
- [947] W. J. Gutjahr. **A Graph-based Ant System and its Convergence**. *Future Generation Computer Systems*, 16(8):873–888, 2000.
- [948] W. J. Gutjahr. **ACO Algorithms with Guaranteed Convergence to the Optimal Solution**. *Information Processing Letters*, 82(3):145–153, 2002.
- [949] W. J. Gutjahr. **A converging ACO algorithm for stochastic combinatorial optimization**. In A. Albrecht and K. Steinhöfel, editors, *Stochastic Algorithms: Foundations and Applications*, volume 2827 of *Lecture Notes in Computer Science*, pages 10–25. Springer Verlag, 2003. doi:10.1007/b13596.
- [950] W. J. Gutjahr. **S-ACO: An Ant-Based Approach to Combinatorial Optimization Under Uncertainty**. In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 4th International Workshop, ANTS 2004*, volume 3172 of *Lecture Notes in Computer Science*, pages 238–249. Springer, Heidelberg, Germany, 2004.
- [951] W. J. Gutjahr. **On the finite-time dynamics of ant colony optimization**. *Methodology and Computing in Applied Probability*, 8(1):105–133, 2006.
- [952] W. J. Gutjahr. **Mathematical runtime analysis of ACO algorithms: survey on an emerging issue**. *Swarm Intelligence*, 1(1):59–79, 2007.
- [953] W. J. Gutjahr. **First steps to the runtime complexity analysis of ant colony optimization**. *Computers & Operations Research*, 35(9):2711–2727, 2008.
- [954] W. J. Gutjahr and M. S. Rauner. **An ACO algorithm for a dynamic regional nurse-scheduling problem in Austria**. *Computers & Operations Research*, 34(3): 642–666, 2007. doi:10.1016/j.cor.2005.03.018.

- [955] W. J. Gutjahr and G. Sebastiani. **Runtime analysis of ant colony optimization with best-so-far reinforcement**. *Methodology and Computing in Applied Probability*, 10(3):409–433, 2008.
- [956] E. Haasdijk, A. Atta-ul Qayyum, and A. E. Eiben. **Racing to improve on-line, on-board evolutionary robotics**. In N. Krasnogor and P. L. Lanzi, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2011*, pages 187–194. ACM Press, New York, NY, 2011.
- [957] S. Häckel, M. Fischer, D. Zechel, and T. Teich. **A multi-objective ant colony approach for Pareto-optimization using dynamic programming**. In C. Ryan, editor, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2008*, pages 33–40. ACM Press, New York, NY, 2008.
- [958] J. Hadar and W. R. Russell. **Rules for ordering uncertain prospects**. *The American Economic Review*, 59(1):25–34, 1969.  
*Keywords*: stochastic dominance.
- [959] D. Hadka and P. M. Reed. **Diagnostic Assessment of Search Controls and Failure Modes in Many-Objective Evolutionary Optimization**. *Evolutionary Computation*, 20(3):423–452, 2012.
- [960] D. Hadka and P. M. Reed. **Borg: An Auto-Adaptive Many-Objective Evolutionary Computing Framework**. *Evolutionary Computation*, 21(2):231–259, 2013.
- [961] D. Hadka, P. M. Reed, and T. W. Simpson. **Diagnostic assessment of the Borg MOEA for many-objective product family design problems**. In *Proceedings of the 2012 Congress on Evolutionary Computation (CEC’12)*, pages 1–10, Piscataway, NJ, 2012. IEEE Press.
- [962] Y. Haimes, L. Lasdon, and D. Da Wismer. **On a bicriterion formation of the problems of integrated system identification and system optimization**. *IEEE Transactions on Systems, Man, and Cybernetics*, 1(3):296–297, 1971. doi:10.1109/TSMC.1971.4308298.  
*Keywords*: epsilon-constraint method.
- [963] B. Hajek. **Cooling Schedules for Optimal Annealing**. *Mathematics of Operations Research*, 13(2):311–329, 1988.
- [964] B. Hajek and G. Sasaki. **Simulated annealing—to cool or not**. *System & Control Letters*, 12(5):443–447, 1989.
- [965] P. Hajela and C.-Y. Lin. **Genetic search strategies in multicriterion optimal design**. *Structural Optimization*, 4(2):99–107, 1992.
- [966] G. T. Hall, P. S. Oliveto, and D. Sudholt. **On the impact of the cutoff time on the performance of algorithm configurators**. In M. López-Ibáñez, A. Auger, and T. Stützle, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2019*, pages 907–915. ACM Press, New York, NY, 2019. ISBN 978-1-4503-6111-8. doi:10.1145/3321707.3321879.  
*Keywords*: theory, automatic configuration, capping.

- [967] H. W. Hamacher and G. Ruhe. **On spanning tree problems with multiple objectives.** *Annals of Operations Research*, 52(4):209–230, 1994.
- [968] Y. Hamadi and M. Schoenauer, editors. *6th International Conference, LION 6, Paris, France, January 16-20, 2012. Selected Papers*, volume 7219 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2012.
- [969] Y. Hamadi, E. Monfroy, and F. Saubion, editors. *Autonomous Search*. Springer, Berlin, Germany, 2012.
- [970] H. Hammami and T. Stützle. **A Computational Study of Neighborhood Operators for Job-Shop Scheduling Problems with Regular Objectives.** In B. Hu and M. López-Ibáñez, editors, *Proceedings of EvoCOP 2017 – 17th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 10197 of *Lecture Notes in Computer Science*, pages 1–17. Springer, Heidelberg, Germany, 2017. doi:10.1007/978-3-319-55453-2.
- [971] J. Handl and J. D. Knowles. **Modes of Problem Solving with Multiple Objectives: Implications for Interpreting the Pareto Set and for Decision Making.** In J. D. Knowles, D. Corne, K. Deb, and D. R. Chair, editors, *Multiobjective Problem Solving from Nature*, Natural Computing Series, pages 131–151. Springer, 2008. doi:10.1007/978-3-540-72964-8\_7.
- [972] J. Handl, E. Hart, P. R. Lewis, M. López-Ibáñez, G. Ochoa, and B. Paechter, editors. *Parallel Problem Solving from Nature - PPSN XIV 14th International Conference, Edinburgh, UK, September 17-21, 2016, Proceedings*, volume 9921 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2016. ISBN 978-3-319-45822-9. doi:10.1007/978-3-319-45823-6.
- [973] T. Hanne. **On the convergence of multiobjective evolutionary algorithms.** *European Journal of Operational Research*, 117(3):553–564, 1999.
- [974] M. P. Hansen. **Tabu search for multiobjective optimization: MOTS.** In J. Climaco, editor, *Proceedings of the 13th International Conference on Multiple Criteria Decision Making (MCDM'97)*, pages 574–586. Springer Verlag, 1997.
- [975] M. P. Hansen. *Metaheuristics for multiple objective combinatorial optimization*. PhD thesis, Institute of Mathematical Modelling, Technical University of Denmark, Mar. 1998.
- [976] M. P. Hansen and A. Jaszkiewicz. **Evaluating the quality of approximations to the non-dominated set.** Technical Report IMM-REP-1998-7, Institute of Mathematical Modelling, Technical University of Denmark, Lyngby, Denmark, 1998.
- [977] N. Hansen. **The CMA evolution strategy: a comparing review.** In *Towards a new evolutionary computation*, pages 75–102. Springer, 2006.
- [978] N. Hansen. **Benchmarking a BI-population CMA-ES on the BBOB-2009 function testbed.** In F. Rothlauf, editor, *GECCO (Companion)*, pages 2389–2396. ACM Press, New York, NY, 2009.  
Keywords: bipop-cma-es.
- [979] N. Hansen and A. Ostermeier. **Completely derandomized self-adaptation in evolution strategies.** *Evolutionary Computation*, 9(2):159–195, 2001. doi:10.1162/106365601750190398.  
Keywords: CMA-ES.



- [980] N. Hansen, A. Auger, S. Finck, and R. Ros. **Real-Parameter Black-Box Optimization Benchmarking 2009: Experimental setup**. Technical Report RR-6828, INRIA, France, 2009.  
Annotation: <http://coco.gforge.inria.fr/bbob2012-downloads>.
- [981] N. Hansen, S. Finck, R. Ros, and A. Auger. **Real-Parameter Black-Box Optimization Benchmarking 2009: Noiseless Functions Definitions**. Technical Report RR-6829, INRIA, France, 2009. Updated February 2010.  
Annotation: <http://coco.gforge.inria.fr/bbob2012-downloads>.
- [982] N. Hansen, R. Ros, N. Mauny, M. Schoenauer, and A. Auger. **Impacts of invariance in search: When CMA-ES and PSO face ill-conditioned and non-separable problems**. *Applied Soft Computing*, 11(8):5755–5769, 2011.
- [983] N. Hansen, A. Auger, O. Mersmann, T. Tušar, and D. Brockhoff. **COCO: A platform for comparing continuous optimizers in a black-box setting**. *Arxiv preprint arXiv:1603.08785*, 2016.
- [984] P. Hansen and B. Jaumard. **Algorithms for the Maximum Satisfiability Problem**. *Computing*, 44:279–303, 1990.
- [985] P. Hansen and N. Mladenović. **Variable neighborhood search: Principles and applications**. *European Journal of Operational Research*, 130(3):449–467, 2001.
- [986] P. Hansen and N. Mladenović. **Variable Neighborhood Search**. In F. Glover and G. Kochenberger, editors, *Handbook of Metaheuristics*, pages 145–184. Kluwer Academic Publishers, Norwell, MA, 2002.
- [987] P. Hansen, N. Mladenović, J. Brimberg, and J. A. M. Pérez. **Variable Neighborhood Search**. In M. Gendreau and J.-Y. Potvin, editors, *Handbook of Metaheuristics*, volume 146 of *International Series in Operations Research & Management Science*, pages 61–86. Springer, New York, NY, 2 edition, 2010.
- [988] J.-K. Hao and M. Middendorf, editors. *Evolutionary Computation in Combinatorial Optimization – 12th European Conference, EvoCOP 2012, Málaga, Spain, April 11-13, 2012, Proceedings*, volume 7245 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2012.
- [989] J.-K. Hao, E. Lutton, E. M. A. Ronald, M. Schoenauer, and D. Snyers, editors. *Artificial Evolution, Third European Conference, AE’97, Nîmes, France, 22-24 October 1997, Selected Papers*, volume 1363 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 1998. doi:10.1007/BFb0026589.
- [990] J.-K. Hao, P. Legrand, P. Collet, N. Monmarché, E. Lutton, and M. Schoenauer, editors. *Artificial Evolution: 10th International Conference, Evolution Artificielle, EA, 2011, Angers, France, October 24-26, 2011. Revised Selected Papers*, volume 7401 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2012.
- [991] Z. Hao, R. Cai, and H. Huang. **An Adaptive Parameter Control Strategy for ACO**. In *Proceedings of the International Conference on Machine Learning and Cybernetics*, pages 203–206. IEEE Press, 2006.



- [992] Z. Hao, H. Huang, Y. Qin, and R. Cai. **An ACO Algorithm with Adaptive Volatility Rate of Pheromone Trail.** In Y. Shi, G. D. van Albada, J. Dongarra, and P. M. A. Sloot, editors, *Computational Science – ICCS 2007, 7th International Conference, Proceedings, Part IV*, volume 4490 of *Lecture Notes in Computer Science*, pages 1167–1170. Springer, Heidelberg, Germany, 2007.
- [993] K. Haraguchi. **Iterated Local Search with Trellis-Neighborhood for the Partial Latin Square Extension Problem.** *Journal of Heuristics*, 22(5):727–757, 2016.
- [994] D. P. Hardin and E. B. Saff. **Discretizing Manifolds via Minimum Energy Points.** *Notices of the American Mathematical Society*, 51(10):1186–1194, 2004.
- [995] E. Hart and K. Sim. **A Hyper-Heuristic Ensemble Method for Static Job-Shop Scheduling.** *Evolutionary Computation*, 24(4):609–635, 2016. doi:10.1162/EVC0\_a\_00183.
- [996] J. P. Hart and A. W. Shogan. **Semi-greedy heuristics: An empirical study.** *Operations Research Letters*, 6(3):107–114, 1987.
- [997] W. D. Harvey and M. L. Ginsberg. **Limited Discrepancy Search.** In C. S. Mellish, editor, *Proceedings of the Fourteenth International Joint Conference on Artificial Intelligence (IJCAI-95)*, pages 607–615. Morgan Kaufmann Publishers, 1995.
- [998] H. Hashimoto, M. Yagiura, and T. Ibaraki. **An Iterated Local Search Algorithm for the Time-dependent Vehicle Routing Problem with Time Windows.** *Discrete Optimization*, 5(2):434–456, 2008.
- [999] S. Hasija and C. Rajendran. **Scheduling in flowshops to minimize total tardiness of jobs.** *International Journal of Production Research*, 42(11):2289–2301, 2004. doi:10.1080/00207540310001657595.
- [1000] S. Haykin. **A comprehensive foundation.** *Neural Networks*, 2:41, 2004.
- [1001] Ö. Hazir, Y. Günalay, and E. Erel. **Customer order scheduling problem: a comparative metaheuristics study.** *International Journal of Advanced Manufacturing Technology*, 37(5):589–598, May 2008. doi:10.1007/s00170-007-0998-8.  
*Keywords:* ACO, Customer order scheduling, Genetic algorithms, Meta-heuristics, Simulated annealing, Tabu search.
- [1002] V. Heidrich-Meisner and C. Igel. **Hoeffding and Bernstein races for selecting policies in evolutionary direct policy search.** In A. P. Danyluk, L. Bottou, and M. L. Littman, editors, *Proceedings of the 26th Annual International Conference on Machine Learning*, pages 401–408. ACM Press, New York, NY, 2009. doi:10.1145/1553374.1553426.  
*Keywords:* automated algorithm configuration, CMA-ES, racing.
- [1003] S. R. Hejazi and S. Saghafian. **Flowshop-scheduling Problems with Makespan Criterion: A Review.** *International Journal of Production Research*, 43(14):2895–2929, 2005.
- [1004] C. Helmberg and F. Rendl. **Solving quadratic (0,1)-problems by semidefinite programs and cutting planes.** *Mathematical Programming*, 82(3):291–315, 1998.

- [1005] K. Helsgaun. **An Effective Implementation of the Lin-Kernighan Traveling Salesman Heuristic.** *European Journal of Operational Research*, 126:106–130, 2000.
- [1006] K. Helsgaun. **General  $k$ -opt Submoves for the Lin-Kernighan TSP Heuristic.** *Mathematical Programming Computation*, 1(2–3):119–163, 2009.
- [1007] D. Henderson, S. H. Jacobson, and A. W. Johnson. **The Theory and Practice of Simulated Annealing.** In *Handbook of Metaheuristics*, pages 287–319. Springer, 2003.
- [1008] J. L. Henning. **SPEC CPU2000: measuring CPU performance in the New Millennium.** *Computer*, 33(7):28–35, 2000. doi:[10.1109/2.869367](https://doi.org/10.1109/2.869367).
- [1009] H. Hernández and C. Blum. **Ant colony optimization for multicasting in static wireless ad-hoc networks.** *Swarm Intelligence*, 3(2):125–148, 2009.
- [1010] F. Herrera, M. Lozano, and J. L. Verdegay. **Tackling Real-Coded Genetic Algorithms: Operators and Tools for Behavioural Analysis.** *Artificial Intelligence Review*, 12:265–319, 1998.  
*Keywords:* genetic algorithms, real coding, continuous search spaces, mutation, recombination.
- [1011] F. Herrera, M. Lozano, and A. M. Sánchez. **A taxonomy for the crossover operator for real-coded genetic algorithms: An experimental study.** *International Journal of Intelligent Systems*, 18(3):309–338, 2003. doi:[10.1002/int.10091](https://doi.org/10.1002/int.10091).
- [1012] F. Herrera, M. Lozano, and D. Molina. **Test suite for the special issue of Soft Computing on scalability of evolutionary algorithms and other metaheuristics for large scale continuous optimization problems.** <http://sci2s.ugr.es/eamhco/>, 2010.  
*Keywords:* SOCO benchmark.
- [1013] D. P. Heyman and M. J. Sobel. *Stochastic models in operations research: stochastic optimization*, volume 2. Courier Corporation, 2003.
- [1014] C. Hicks. **A Genetic Algorithm tool for optimising cellular or functional layouts in the capital goods industry.** *International Journal of Production Economics*, 104(2):598–614, 2006. doi:[10.1016/j.ijpe.2005.03.010](https://doi.org/10.1016/j.ijpe.2005.03.010).
- [1015] G. E. Hinton and R. R. Salakhutdinov. **Reducing the dimensionality of data with neural networks.** *Science*, 313(5786):504–507, 2006.
- [1016] D. S. Hochbaum, editor. *Approximation Algorithms For NP-hard Problems*. PWS Publishing Co., 1996.
- [1017] W. Hoeffding. **Probability inequalities for sums of bounded random variables.** *Journal of the American Statistical Association*, 58(301):13–30, 1963.
- [1018] J. Holland. *Adaptation in Natural and Artificial Systems*. University of Michigan Press, 1975.
- [1019] M. Hollander and D. A. Wolfe. *Nonparametric statistical inference*. John Wiley & Sons, New York, 1973. Second edition (1999).
- [1020] R. C. Holte and A. Howe, editors. *Proceedings of the Twenty-Second AAAI Conference on Artificial Intelligence, July 22-26, 2007, Vancouver, British Columbia, Canada*, 2007. AAAI Press/MIT Press, Menlo Park, CA.

- [1021] I. Hong, A. B. Kahng, and B. R. Moon. **Improved large-step Markov chain variants for the symmetric TSP**. *Journal of Heuristics*, 3(1):63–81, 1997.
- [1022] G. Hooker. **Generalized functional ANOVA diagnostics for high-dimensional functions of dependent variables**. *Journal of Computational and Graphical Statistics*, 16(3):709–732, 2012. doi:[10.1198/106186007X237892](https://doi.org/10.1198/106186007X237892).
- [1023] J. N. Hooker. **Needed: An Empirical Science of Algorithms**. *Operations Research*, 42(2):201–212, 1994.
- [1024] J. N. Hooker. **Testing Heuristics: We Have It All Wrong**. *Journal of Heuristics*, 1(1):33–42, 1996.
- [1025] H. H. Hoos. **Programming by Optimisation: Towards a new Paradigm for Developing High-Performance Software**. In *MIC 2011, the 9th Metaheuristics International Conference*, 2011. URL <http://mic2011.diegm.uniud.it/uploads/plenaries/Hoos-MIC2011.pdf>. Plenary talk.
- [1026] H. H. Hoos. **Automated Algorithm Configuration and Parameter Tuning**. In Y. Hamadi, E. Monfroy, and F. Saubion, editors, *Autonomous Search*, pages 37–71. Springer, Berlin, Germany, 2012. doi:[10.1007/978-3-642-21434-9\\_3](https://doi.org/10.1007/978-3-642-21434-9_3).
- [1027] H. H. Hoos. **Programming by optimization**. *Communications of the ACM*, 55(2):70–80, Feb. 2012. doi:[10.1145/2076450.2076469](https://doi.org/10.1145/2076450.2076469).
- [1028] H. H. Hoos and T. Stützle. *Stochastic Local Search: Foundations and Applications*. Elsevier, Amsterdam, The Netherlands, 2004.
- [1029] H. H. Hoos and T. Stützle. *Stochastic Local Search—Foundations and Applications*. Morgan Kaufmann Publishers, San Francisco, CA, 2005.
- [1030] H. H. Hoos and T. Stützle. **On the Empirical Scaling of Run-time for Finding Optimal Solutions to the Traveling Salesman Problem**. *European Journal of Operational Research*, 238(1):87–94, 2014.
- [1031] H. H. Hoos and T. Stützle. **On the Empirical Time Complexity of Finding Optimal Solutions vs. Proving Optimality for Euclidean TSP Instances**. *Optimization Letters*, 9(6):1247–1254, 2015.
- [1032] H. H. Hoos, M. T. Lindauer, and T. Schaub. **Claspfolio 2: Advances in Algorithm Selection for Answer Set Programming**. *Theory and Practice of Logic Programming*, 14(4-5):560–585, 2014.
- [1033] J. Horn, N. Nafpliotis, and D. E. Goldberg. **A niched Pareto genetic algorithm for multiobjective optimization**. In *Proceedings of the 1994 World Congress on Computational Intelligence (WCCI 1994)*, pages 82–87, Piscataway, NJ, June 1994. IEEE Press. doi:[10.1109/ICEC.1994.350037](https://doi.org/10.1109/ICEC.1994.350037).
- [1034] C. Horoba and F. Neumann. **Benefits and drawbacks for the use of epsilon-dominance in evolutionary multi-objective optimization**. In C. Ryan, editor, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2008*, pages 641–648, New York, NY, 2008. ACM Press.

- [1035] K. Hoste and L. Eeckhout. **Cole: Compiler Optimization Level Exploration**. In M. L. Soffa and E. Duesterwald, editors, *Proceedings of the 6th Annual IEEE/ACM International Symposium on Code Generation and Optimization*, CGO '08, pages 165–174. ACM Press, New York, NY, 2008. doi:[10.1145/1356058.1356080](https://doi.org/10.1145/1356058.1356080).
- [1036] S. P. Hozo, B. Djulbegovic, and I. Hozo. **Estimating the mean and variance from the median, range, and the size of a sample**. *BMC Medical Research Methodology*, 5(1):13, 2005.
- [1037] B. Hu and M. López-Ibáñez, editors. *Evolutionary Computation in Combinatorial Optimization – 17th European Conference, EvoCOP 2017, Amsterdam, The Netherlands, April 19-21, 2017, Proceedings*, volume 10197 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2017. doi:[10.1007/978-3-319-55453-2](https://doi.org/10.1007/978-3-319-55453-2).
- [1038] T. C. Hu, A. B. Kahng, and C.-W. A. Tsao. **Old Bachelor Acceptance: A New Class of Non-Monotone Threshold Accepting Methods**. *ORSA Journal on Computing*, 7(4):417–425, 1995.
- [1039] W. Hu, L. Yan, H. Wang, B. Du, and D. Tao. **Real-time traffic jams prediction inspired by Biham, Middleton and Levine (BML) model**. *Information Sciences*, 2017.  
Keywords: BML model,Prediction,Real-time,Traffic jam,Urban traffic network.
- [1040] W. Hu, H. Wang, Z. Qiu, C. Nie, and L. Yan. **A quantum particle swarm optimization driven urban traffic light scheduling model**. *Neural Computing & Applications*, 2018. doi:[10.1007/s00521-016-2508-0](https://doi.org/10.1007/s00521-016-2508-0).  
Keywords: BML,Optimization,Simulation,Traffic congestion,Updating rules.
- [1041] D.-S. Huang, K. Li, and G. W. Irwin, editors. *International Conference on Computational Science (3)*, volume 4115 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2006.
- [1042] H. Huang, X. Yang, Z. Hao, and R. Cai. **A Novel ACO Algorithm with Adaptive Parameter**. In D.-S. Huang, K. Li, and G. W. Irwin, editors, *International Conference on Computational Science (3)*, volume 4115 of *Lecture Notes in Computer Science*, pages 12–21. Springer, Heidelberg, Germany, 2006.
- [1043] K. Huang, C. Yang, and K. Tseng. **Fast algorithms for finding the common subsequences of multiple sequences**. In *Proceedings of the International Computer Symposium*, pages 1006–1011. IEEE Press, 2004.
- [1044] S. Huband, P. Hingston, L. Barone, and L. While. **A review of multiobjective test problems and a scalable test problem toolkit**. *IEEE Transactions on Evolutionary Computation*, 10(5):477–506, 2006. doi:[10.1109/TEVC.2005.861417](https://doi.org/10.1109/TEVC.2005.861417).
- [1045] B. Huberman, R. Lukose, and T. Hogg. **An Economic Approach to Hard Computational Problems**. *Science*, 275:51–54, 1997.
- [1046] D. L. Huerta-Muñoz, R. Z. Ríos-Mercado, and R. Ruiz. **An Iterated Greedy Heuristic for a Market Segmentation Problem with Multiple Attributes**. *European Journal of Operational Research*, 261(1):75–87, 2017.

- [1047] E. J. Hughes. **Multiple single objective Pareto sampling.** In *Proceedings of the 2003 Congress on Evolutionary Computation (CEC 2003)*, volume 4, pages 2678–2684, Piscataway, NJ, Dec. 2003. IEEE Press.
- [1048] E. J. Hughes. **MSOPS-II: A general-purpose many-objective optimiser.** In *Proceedings of the 2007 Congress on Evolutionary Computation (CEC 2007)*, pages 3944–3951, Piscataway, NJ, 2007. IEEE Press.
- [1049] E. J. Hughes. **Many-objective directed evolutionary line search.** In N. Krasnogor and P. L. Lanzi, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2011*, pages 761–768. ACM Press, New York, NY, 2011.
- [1050] E. Hüllermeier, R. Kruse, and F. Hoffmann, editors. *13th International Conference on Information Processing and Management of Uncertainty, IPMU 2010, Germany, June 28-July 2, 2010. Proceedings*, volume 6178 of *Lecture Notes in Artificial Intelligence*. Springer, Heidelberg, Germany, 2010.
- [1051] J. Humeau, A. Liefoghe, E.-G. Talbi, and S. Verel. **ParadisEO-MO: From Fitness Landscape Analysis to Efficient Local Search Algorithms.** Rapport de recherche RR-7871, INRIA, France, 2012.
- [1052] J. Humeau, A. Liefoghe, E.-G. Talbi, and S. Verel. **ParadisEO-MO: From Fitness Landscape Analysis to Efficient Local Search Algorithms.** *Journal of Heuristics*, 19(6):881–915, June 2013. doi:[10.1007/s10732-013-9228-8](https://doi.org/10.1007/s10732-013-9228-8).
- [1053] Y. Hung, V. R. Joseph, and S. N. Melkote. **Design and Analysis of Computer Experiments With Branching and Nested Factors.** *Technometrics*, 51(4):354–365, 2009. doi:[10.1198/TECH.2009.07097](https://doi.org/10.1198/TECH.2009.07097).
- [1054] M. Hunt and M. López-Ibáñez. **Modeling a Decision-Maker in Goal Programming by means of Computational Rationality.** In I. Palomares, editor, *International Alan Turing Conference on Decision Support and Recommender systems*, pages 17–20, London, UK, Nov., 21–22 2019. Alan Turing Institute. ISBN 978-1-5262-0820-0.
- [1055] S. H. Hurlbert. **Pseudoreplication and the Design of Ecological Field Experiments.** *Ecological Monographs*, 54(2):187–211, 1984.
- [1056] M. Hurtgen and J.-C. Maun. **Optimal PMU placement using Iterated Local Search.** *International Journal of Electrical Power & Energy Systems*, 32(8):857–860, 2010.
- [1057] M. S. Hussin and T. Stützle. **Hierarchical Iterated Local Search for the Quadratic Assignment Problem.** In M. J. Blesa, C. Blum, L. Di Gaspero, A. Roli, M. Sampels, and A. Schaerf, editors, *Hybrid Metaheuristics*, volume 5818 of *Lecture Notes in Computer Science*, pages 115–129. Springer, Heidelberg, Germany, 2009. doi:[10.1007/978-3-642-04918-7\\_9](https://doi.org/10.1007/978-3-642-04918-7_9).
- [1058] M. S. Hussin and T. Stützle. **Tabu Search vs. Simulated Annealing for Solving Large Quadratic Assignment Instances.** Technical Report TR/IRIDIA/2010-020, IRIDIA, Université Libre de Bruxelles, Belgium, 2010.
- [1059] M. S. Hussin and T. Stützle. **Tabu Search vs. Simulated Annealing for Solving Large Quadratic Assignment Instances.** *Computers & Operations Research*, 43: 286–291, 2014.

- [1060] F. Hutter. *Automated Configuration of Algorithms for Solving Hard Computational Problems*. PhD thesis, University of British Columbia, Department of Computer Science, Vancouver, Canada, Oct. 2009.
- [1061] F. Hutter and S. Ramage. *Manual for SMAC*. University of British Columbia, 2015. URL <http://www.cs.ubc.ca/labs/beta/Projects/SMAC/v2.10.03/manual.pdf>. SMAC version 2.10.03.
- [1062] F. Hutter, D. Babić, H. H. Hoos, and A. J. Hu. **Boosting Verification by Automatic Tuning of Decision Procedures**. In J. Baumgartner and M. Sheeran, editors, *FMCAD’07: Proceedings of the 7th International Conference Formal Methods in Computer Aided Design*, pages 27–34, Austin, Texas, USA, 2007. IEEE Computer Society, Washington, DC, USA.
- [1063] F. Hutter, H. H. Hoos, and T. Stützle. **Automatic Algorithm Configuration Based on Local Search**. In R. C. Holte and A. Howe, editors, *Proc. of the Twenty-Second Conference on Artificial Intelligence (AAAI ’07)*, pages 1152–1157. AAAI Press/MIT Press, Menlo Park, CA, 2007.
- [1064] F. Hutter, H. H. Hoos, K. Leyton-Brown, and K. P. Murphy. **An experimental investigation of model-based parameter optimisation: SPO and beyond**. In F. Rothlauf, editor, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2009*, pages 271–278. ACM Press, New York, NY, 2009. doi:10.1145/1569901.1569940.
- [1065] F. Hutter, H. H. Hoos, K. Leyton-Brown, and T. Stützle. **ParamILS: An Automatic Algorithm Configuration Framework**. *Journal of Artificial Intelligence Research*, 36: 267–306, Oct. 2009.
- [1066] F. Hutter, H. H. Hoos, and K. Leyton-Brown. **Automated Configuration of Mixed Integer Programming Solvers**. In A. Lodi, M. Milano, and P. Toth, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 7th International Conference, CPAIOR 2010*, volume 6140 of *Lecture Notes in Computer Science*, pages 186–202. Springer, Heidelberg, Germany, 2010.
- [1067] F. Hutter, H. H. Hoos, and K. Leyton-Brown. **Tradeoffs in the Empirical Evaluation of Competing Algorithm Designs**. *Annals of Mathematics and Artificial Intelligence*, 60(1–2):65–89, 2010.
- [1068] F. Hutter, H. H. Hoos, K. Leyton-Brown, and K. Murphy. **Time-Bounded Sequential Parameter Optimization**. In C. Blum and R. Battiti, editors, *Learning and Intelligent Optimization, 4th International Conference, LION 4*, volume 6073 of *Lecture Notes in Computer Science*, pages 281–298. Springer, Heidelberg, Germany, 2010. doi:10.1007/978-3-642-13800-3\_30.
- [1069] F. Hutter, H. H. Hoos, and K. Leyton-Brown. **Sequential Model-Based Optimization for General Algorithm Configuration**. In C. A. Coello Coello, editor, *Learning and Intelligent Optimization, 5th International Conference, LION 5*, volume 6683 of *Lecture Notes in Computer Science*, pages 507–523. Springer, Heidelberg, Germany, 2011.  
*Keywords:* SMAC,ROAR.
- [1070] F. Hutter, H. H. Hoos, and K. Leyton-Brown. **Parallel Algorithm Configuration**. In Y. Hamadi and M. Schoenauer, editors, *Learning and Intelligent Optimization, 6th*



- International Conference, LION 6*, volume 7219 of *Lecture Notes in Computer Science*, pages 55–70. Springer, Heidelberg, Germany, 2012.
- [1071] F. Hutter, H. H. Hoos, and K. Leyton-Brown. **Bayesian Optimization With Censored Response Data**. *Arxiv preprint arXiv:1310.1947*, 2013. URL <http://arxiv.org/abs/1310.1947>.
- [1072] F. Hutter, H. H. Hoos, and K. Leyton-Brown. **Identifying key algorithm parameters and instance features using forward selection**. In P. M. Pardalos and G. Nicosia, editors, *Learning and Intelligent Optimization, 7th International Conference, LION 7*, volume 7997 of *Lecture Notes in Computer Science*, pages 364–381. Springer, Heidelberg, Germany, 2013. doi:10.1007/978-3-642-44973-4\_40.  
*Keywords:* parameter importance.
- [1073] F. Hutter, H. H. Hoos, and K. Leyton-Brown. **An Efficient Approach for Assessing Hyperparameter Importance**. In E. P. Xing and T. Jebara, editors, *Proceedings of the 31th International Conference on Machine Learning*, volume 32, pages 754–762, 2014. URL <http://jmlr.org/proceedings/papers/v32/hutter14.html>.  
*Keywords:* fANOVA, parameter importance.
- [1074] F. Hutter, M. López-Ibáñez, C. Fawcett, M. T. Lindauer, H. H. Hoos, K. Leyton-Brown, and T. Stützle. **AClib: a Benchmark Library for Algorithm Configuration**. In P. M. Pardalos, M. G. C. Resende, C. Vogiatzis, and J. L. Walteros, editors, *Learning and Intelligent Optimization, 8th International Conference, LION 8*, volume 8426 of *Lecture Notes in Computer Science*, pages 36–40. Springer, Heidelberg, Germany, 2014. doi:10.1007/978-3-319-09584-4\_4.
- [1075] F. Hutter, L. Xu, H. H. Hoos, and K. Leyton-Brown. **Algorithm runtime prediction: Methods & evaluation**. *Artificial Intelligence*, 206:79–111, 2014.
- [1076] F. Hutter, H. H. Hoos, K. Leyton-Brown, and T. Stützle. **ParamILS**. <http://www.cs.ubc.ca/labs/beta/Projects/ParamILS/>, 2017. Version visited last on July 2017.
- [1077] F. Hutter, M. T. Lindauer, A. Balint, S. Bayless, H. H. Hoos, and K. Leyton-Brown. **The Configurable SAT Solver Challenge (CSSC)**. *Artificial Intelligence*, 243(1–25), 2017.
- [1078] F. Hutter, M. T. Lindauer, A. Balint, S. Bayless, H. H. Hoos, and K. Leyton-Brown. **The Configurable SAT Solver Challenge (CSSC)**. *Artificial Intelligence*, 243:1–25, 2017. doi:10.1016/j.artint.2016.09.006.
- [1079] C. Iacopino and P. Palmer. **The Dynamics of Ant Colony Optimization Algorithms Applied to Binary Chains**. *Swarm Intelligence*, 6(4):343–377, 2012.
- [1080] T. Ibaraki. **A Personal Perspective on Problem Solving by General Purpose Solvers**. *International Transactions in Operational Research*, 17(3):303–315, 2010.
- [1081] T. Ibaraki, S. Imahori, K. Nonobe, K. Sobue, T. Uno, and M. Yagiura. **An Iterated Local Search Algorithm for the Vehicle Routing Problem with Convex Time Penalty Functions**. *Discrete Applied Mathematics*, 156(11):2050–2069, 2008.
- [1082] IBM. **ILOG CPLEX Optimizer**. <http://www.ibm.com/software/integration/optimization/cplex-optimizer/>, 2017.

- [1083] ICMLC. *Proceedings of the International Conference on Machine Learning and Cybernetics*, 2006. IEEE Press.
- [1084] J. Ide and A. Schöbel. **Robustness for uncertain multi-objective optimization: a survey and analysis of different concepts**. *OR Spektrum*, 38(1):235–271, 2016. doi:10.1007/s00291-015-0418-7.
- [1085] IEEE CEC. *Proceedings of the 1999 Congress on Evolutionary Computation (CEC 1999)*, Piscataway, NJ, 1999. IEEE Press.
- [1086] IEEE CEC. *Proceedings of the 2000 Congress on Evolutionary Computation (CEC 2000)*, Piscataway, NJ, July 2000. IEEE Press.
- [1087] IEEE CEC. *Proceedings of the 2001 Congress on Evolutionary Computation (CEC 2001)*, Piscataway, NJ, 2001. IEEE Press.
- [1088] IEEE CEC. *Proceedings of the 2002 Congress on Evolutionary Computation (CEC’02)*, Piscataway, NJ, 2002. IEEE Press.
- [1089] IEEE CEC. *Proceedings of the 2003 Congress on Evolutionary Computation (CEC 2003)*, volume 4, Piscataway, NJ, Dec. 2003. IEEE Press.
- [1090] IEEE CEC. *Proceedings of the 2004 Congress on Evolutionary Computation (CEC 2004)*, Piscataway, NJ, Sept. 2004. IEEE Press.
- [1091] IEEE CEC. *Proceedings of the 2005 Congress on Evolutionary Computation (CEC 2005)*, Piscataway, NJ, Sept. 2005. IEEE Press.
- [1092] IEEE CEC. *Proceedings of the 2006 Congress on Evolutionary Computation (CEC 2006)*, Piscataway, NJ, July 2006. IEEE Press.
- [1093] IEEE CEC. *Proceedings of the 2007 Congress on Evolutionary Computation (CEC 2007)*, Piscataway, NJ, 2007. IEEE Press.
- [1094] IEEE CEC. *Proceedings of the IEEE Congress on Evolutionary Computation, CEC 2008, June 1-6, 2008, Hong Kong, China*, Piscataway, NJ, 2008. IEEE Press.
- [1095] IEEE CEC. *Proceedings of the 2009 Congress on Evolutionary Computation (CEC 2009)*, Piscataway, NJ, 2009. IEEE Press.
- [1096] IEEE CEC. *Proceedings of the 2011 Congress on Evolutionary Computation (CEC 2011)*, Piscataway, NJ, 2011. IEEE Press.
- [1097] IEEE CEC. *Proceedings of the 2012 Congress on Evolutionary Computation (CEC 2012)*, Piscataway, NJ, 2012. IEEE Press.
- [1098] IEEE CEC. *Proceedings of the 2013 Congress on Evolutionary Computation (CEC 2013)*, Piscataway, NJ, 2013. IEEE Press.
- [1099] IEEE CEC. *Proceedings of the 2014 Congress on Evolutionary Computation (CEC 2014)*, Piscataway, NJ, 2014. IEEE Press.
- [1100] IEEE CEC. *Proceedings of the 2015 Congress on Evolutionary Computation (CEC 2015)*, Piscataway, NJ, 2015. IEEE Press.

- [1101] IEEE CEC. *IEEE Congress on Evolutionary Computation, CEC 2016, Vancouver, BC, Canada, July 24-29, 2016*, Piscataway, NJ, 2016. IEEE Press. ISBN 978-1-5090-0623-6.
- [1102] IEEE CEC. *Proceedings of the 2017 Congress on Evolutionary Computation (CEC 2017)*, Piscataway, NJ, 2017. IEEE Press.
- [1103] IEEE CEC. *Proceedings of the 2018 Congress on Evolutionary Computation (CEC 2018)*, Piscataway, NJ, 2018. IEEE Press.
- [1104] C. Igel and D. V. Arnold, editors. *Genetic and Evolutionary Computation Conference, GECCO 2014, Proceedings, Vancouver, BC, Canada, July 12-16, 2014*. ACM Press, New York, NY, 2014.
- [1105] C. Igel, N. Hansen, and S. Roth. **Covariance Matrix Adaptation for Multi-objective Optimization**. *Evolutionary Computation*, 15(1):1–28, 2007.
- [1106] C. Igel, V. Heidrich-Meisner, and T. Glasmachers. **Shark**. *Journal of Machine Learning Research*, 9:993–996, June 2008. URL <http://www.jmlr.org/papers/volume9/igel08a/igel08a.pdf>.
- [1107] K. Ikeda, H. Kita, and S. Kobayashi. **Failure of Pareto-based MOEAs: Does non-dominated really mean near to optimal?** In *Proceedings of the 2001 Congress on Evolutionary Computation (CEC'01)*, pages 957–962. IEEE Press, Piscataway, NJ, 2001.
- [1108] N. Ilich and S. P. Simonovic. **Evolutionary Algorithm for minimization of pumping cost**. *Journal of Computing in Civil Engineering, ASCE*, 12(4):232–240, Oct. 1998.
- [1109] J. Illian, A. Penttinen, H. Stoyan, and D. Stoyan. *Statistical Analysis and Modelling of Spatial Point Patterns*. Wiley, 2008.
- [1110] T. Imamichi, M. Yagiura, and H. Nagamochi. **An Iterated Local Search Algorithm Based on Nonlinear Programming for the Irregular Strip Packing Problem**. *Discrete Optimization*, 6(4):345–361, 2009.
- [1111] Innovation 24. **LocalSolver**. <http://www.localsolver.com/product.html>, 2016. Last visited, August 15, 2016.
- [1112] A. Inselberg. **The Plane with Parallel Coordinates**. *The visual computer*, 1(2):69–91, 1985.
- [1113] Intel. **Intel Software Autotuning Tool**. <https://software.intel.com/en-us/articles/intel-software-autotuning-tool/>, 2010.
- [1114] S. Iredi, D. Merkle, and M. Middendorf. **Bi-Criterion Optimization with Multi Colony Ant Algorithms**. In E. Zitzler, K. Deb, L. Thiele, C. A. Coello Coello, and D. Corne, editors, *Evolutionary Multi-criterion Optimization, EMO 2001*, volume 1993 of *Lecture Notes in Computer Science*, pages 359–372. Springer, Heidelberg, Germany, 2001.
- [1115] S. Irnich. **A Unified Modeling and Solution Framework for Vehicle Routing and Local Search-Based Metaheuristics**. *INFORMS Journal on Computing*, 20(2): 270–287, 2008.

- [1116] H. Ishibuchi and T. Murata. **A multi-objective genetic local search algorithm and its application to flowshop scheduling.** *IEEE Transactions on Systems, Man, and Cybernetics – Part C*, 28(3):392–403, 1998.
- [1117] H. Ishibuchi, S. Misaki, and H. Tanaka. **Modified simulated annealing algorithms for the flow shop sequencing problem.** *European Journal of Operational Research*, 81(2):388–398, 1995.
- [1118] H. Ishibuchi, N. Tsukamoto, and Y. Nojima. **Evolutionary many-objective optimization: A short review.** In *Proceedings of the 2008 Congress on Evolutionary Computation (CEC 2008)*, pages 2419–2426, Piscataway, NJ, 2008. IEEE Press. doi:10.1109/CEC.2008.4631121.
- [1119] H. Ishibuchi, N. Akedo, and Y. Nojima. **Behavior of Multiobjective Evolutionary Algorithms on Many-Objective Knapsack Problems.** *IEEE Transactions on Evolutionary Computation*, 19(2):264–283, 2015. doi:10.1109/TEVC.2014.2315442.
- [1120] H. Ishibuchi, H. Masuda, and Y. Nojima. **A Study on Performance Evaluation Ability of a Modified Inverted Generational Distance Indicator.** In S. Silva and A. I. Esparcia-Alcázar, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2015*, pages 695–702. ACM Press, New York, NY, 2015.
- [1121] H. Ishibuchi, H. Masuda, Y. Tanigaki, and Y. Nojima. **Modified Distance Calculation in Generational Distance and Inverted Generational Distance.** In A. Gaspar-Cunha, C. H. Antunes, and C. A. Coello Coello, editors, *Evolutionary Multi-criterion Optimization, EMO 2015 Part I*, volume 9018 of *Lecture Notes in Computer Science*, pages 110–125. Springer, Heidelberg, Germany, 2015.
- [1122] H. Ishibuchi et al., editors. *Proceedings of the 2010 Congress on Evolutionary Computation (CEC 2010)*, Piscataway, NJ, 2010. IEEE Press.
- [1123] S. K. Iyer and B. Saxena. **Improved genetic algorithm for the permutation flowshop scheduling problem.** *Computers & Operations Research*, 31(4):593–606, 2004. doi:10.1016/S0305-0548(03)00016-9.
- [1124] C. H. Jackson. **Multi-State Models for Panel Data: The msm Package for R.** *Journal of Statistical Software*, 38(8):1–29, 2011. URL <http://www.jstatsoft.org/v38/i08/>.
- [1125] R. H. F. Jackson, P. T. Boggs, S. G. Nash, and S. Powell. **Guidelines for Reporting Results of Computational Experiments. Report of the Ad Hoc Committee.** *Mathematical Programming*, 49(3):413–425, 1991.
- [1126] L. W. Jacobs and M. J. Brusco. **A Local Search Heuristic for Large Set-Covering Problems.** *Naval Research Logistics*, 42(7):1129–1140, 1995.
- [1127] S. Jacquin, L. Jourdan, and E.-G. Talbi. **Dynamic Programming Based Metaheuristic for Energy Planning Problems.** In A. I. Esparcia-Alcázar and A. M. Mora, editors, *Applications of Evolutionary Computation*, volume 8602 of *Lecture Notes in Computer Science*, pages 165–176. Springer, Heidelberg, Germany, 2014. doi:10.1007/978-3-662-45523-4\_14.

Keywords: irace.

- [1128] D. M. Jaeggi, G. T. Parks, T. Kipouros, and P. J. Clarkson. **The development of a multi-objective Tabu Search algorithm for continuous optimisation problems.** *European Journal of Operational Research*, 185(3):1192–1212, 2008.
- [1129] S. Jain, R. Munos, F. Stephan, and T. Zeugmann, editors. *Algorithmic Learning Theory - 24th International Conference, ALT 2013, Singapore, October 6-9, 2013. Proceedings*, volume 8139 of *Lecture Notes in Computer Science*. Springer, Berlin, Germany, 2013. doi:10.1007/978-3-642-40935-6.
- [1130] S. Jajodia, I. Minis, G. Harhalakis, and J.-M. Proth. **CLASS: computerized layout solutions using simulated annealing.** *International Journal of Production Research*, 30(1):95–108, 1992.
- [1131] A. Jaszkievicz. **Genetic local search for multi-objective combinatorial optimization.** *European Journal of Operational Research*, 137(1):50–71, 2002.
- [1132] A. Jaszkievicz. **On the performance of multiple-objective genetic local search on the 0/1 knapsack problem – A comparative experiment.** *IEEE Transactions on Evolutionary Computation*, 6(4):402–412, 2002.
- [1133] A. Jaszkievicz. **Many-Objective Pareto Local Search.** *European Journal of Operational Research*, 271(3):1001–1013, 2018. doi:10.1016/j.ejor.2018.06.009.
- [1134] A. Jaszkievicz and J. Branke. **Interactive Multiobjective Evolutionary Algorithms.** In J. Branke, K. Deb, K. Miettinen, and R. Słowiński, editors, *Multi-objective Optimization: Interactive and Evolutionary Approaches*, volume 5252 of *Lecture Notes in Computer Science*, pages 179–193. Springer, Heidelberg, Germany, 2008. doi:10.1007/978-3-540-88908-3\_7.
- [1135] A. Jaszkievicz, H. Ishibuchi, and Q. Zhang. **Multiobjective memetic algorithms.** In *Handbook of Memetic Algorithms*, volume 379 of *Studies in Computational Intelligence*, pages 201–217. Springer, 2011.
- [1136] M. T. Jensen. **Reducing the run-time complexity of multiobjective EAs: The NSGA-II and other algorithms.** *IEEE Transactions on Evolutionary Computation*, 7(5):503–515, 2003.
- [1137] M. Jerrum. **Large cliques elude the Metropolis process.** *Random Structures & Algorithms*, 3(4):347–359, 1992.
- [1138] M. Jerrum and A. Sinclair. **The Markov chain Monte Carlo method: an approach to approximate counting and integration.** In D. S. Hochbaum, editor, *Approximation Algorithms For NP-hard Problems*, pages 482–520. PWS Publishing Co., 1996.
- [1139] S. Jiang, Y. S. Ong, J. Zhang, and L. Feng. **Consistencies and Contradictions of Performance Metrics in Multiobjective Optimization.** *IEEE Transactions on Cybernetics*, 44(12):2391–2404, 2014.
- [1140] Y. Jin. **A Comprehensive Survey of Fitness Approximation in Evolutionary Computation.** *Soft Computing*, 9(1):3–12, 2005.
- [1141] Y. Jin and J. Branke. **Evolutionary Optimization in Uncertain Environments—A Survey.** *IEEE Transactions on Evolutionary Computation*, 9(5):303–317, 2005.



- [1142] A. W. Johnson and S. H. Jacobson. **On the Convergence of Generalized Hill Climbing Algorithms.** *Discrete Applied Mathematics*, 119(1):37–57, 2002.
- [1143] D. S. Johnson. **Optimal Two- and Three-stage Production Scheduling with Setup Times Included.** *Naval Research Logistics Quarterly*, 1:61–68, 1954.
- [1144] D. S. Johnson. **Local Optimization and the Traveling Salesman Problem.** In M. Paterson, editor, *Automata, Languages and Programming, 17th International Colloquium*, volume 443 of *Lecture Notes in Computer Science*, pages 446–461. Springer, Heidelberg, Germany, 1990.
- [1145] D. S. Johnson. **A Theoretician’s Guide to the Experimental Analysis of Algorithms.** In M. H. Goldwasser, D. S. Johnson, and C. C. McGeoch, editors, *Data Structures, Near Neighbor Searches, and Methodology: Fifth and Sixth DIMACS Implementation Challenges*, pages 215–250. American Mathematical Society, Providence, RI, 2002.
- [1146] D. S. Johnson and L. A. McGeoch. **The Traveling Salesman Problem: A Case Study in Local Optimization.** In E. H. L. Aarts and J. K. Lenstra, editors, *Local Search in Combinatorial Optimization*, pages 215–310. John Wiley & Sons, Chichester, UK, 1997.
- [1147] D. S. Johnson and L. A. McGeoch. **Experimental Analysis of Heuristics for the STSP.** In G. Gutin and A. Punnen, editors, *The Traveling Salesman Problem and its Variations*, pages 369–443. Kluwer Academic Publishers, Dordrecht, The Netherlands, 2002.
- [1148] D. S. Johnson and M. A. Trick, editors. *Cliques, Coloring, and Satisfiability: Second DIMACS Implementation Challenge*, volume 26 of *DIMACS Series on Discrete Mathematics and Theoretical Computer Science*. American Mathematical Society, Providence, RI, 1996.
- [1149] D. S. Johnson, C. H. Papadimitriou, and M. Yannakakis. **How Easy is Local Search?** *Journal of Computer System Science*, 37(1):79–100, 1988.
- [1150] D. S. Johnson, C. R. Aragon, L. A. McGeoch, and C. Schevon. **Optimization by Simulated Annealing: An Experimental Evaluation: Part I, Graph Partitioning.** *Operations Research*, 37(6):865–892, 1989.
- [1151] D. S. Johnson, C. R. Aragon, L. A. McGeoch, and C. Schevon. **Optimization by Simulated Annealing: An Experimental Evaluation: Part II, Graph Coloring and Number Partitioning.** *Operations Research*, 39(3):378–406, 1991.
- [1152] D. S. Johnson, L. A. McGeoch, C. Rego, and F. Glover. **8th DIMACS Implementation Challenge.** <http://www.research.att.com/~dsj/chtsp/>, 2001.  
*Keywords:* TSP Challenge, RUE, RCE, generators.
- [1153] D. S. Johnson, G. Gutin, L. A. McGeoch, A. Yeo, W. Zhang, and A. Zverovitch. **Experimental Analysis of Heuristics for the ATSP.** In G. Gutin and A. Punnen, editors, *The Traveling Salesman Problem and its Variations*, pages 445–487. Kluwer Academic Publishers, Dordrecht, The Netherlands, 2002.

- [1154] M. E. Johnson, L. M. Moore, and D. Ylvisaker. **Minimax and maximin distance designs**. *Journal of Statistical Planning and Inference*, 26(2):131–148, 1990.  
*Keywords*: Bayesian design.
- [1155] D. R. Jones, M. Schonlau, and W. J. Welch. **Efficient Global Optimization of Expensive Black-Box Functions**. *Journal of Global Optimization*, 13(4):455–492, 1998.  
*Keywords*: EGO.
- [1156] D. E. Joslin and D. P. Clements. **Squeaky Wheel Optimization**. *Journal of Artificial Intelligence Research*, 10:353–373, 1999.
- [1157] Journal of Heuristics. **Journal of Heuristics. Policies on Heuristic Search Research**. <http://www.springer.com/journal/10732>, 2015. Version visited last on June 10, 2015.
- [1158] P. W. Jowitt and G. Germanopoulos. **Optimal pump scheduling in water supply networks**. *Journal of Water Resources Planning and Management, ASCE*, 118(4):406–422, 1992.
- [1159] A. A. Juan, H. R. Lourenço, M. Mateo, R. Luo, and Q. Castellà. **Using Iterated Local Search for Solving the Flow-shop Problem: Parallelization, Parametrization, and Randomization Issues**. *International Transactions in Operational Research*, 21(1):103–126, 2014.
- [1160] A. A. Juan, J. Faulin, S. E. Grasman, M. Rabe, and G. Figueira. **A review of simheuristics: Extending metaheuristics to deal with stochastic combinatorial optimization problems**. *Operations Research Perspectives*, 2:62–72, 2015. doi:10.1016/j.orp.2015.03.001.  
*Keywords*: Metaheuristics; Simulation; Combinatorial optimization; Stochastic problems.
- [1161] H. Juillé and J. B. Pollack. **A Sampling-Based Heuristic for Tree Search Applied to Grammar Induction**. In J. Mostow and C. Rich, editors, *Proceedings of AAAI 1998 – Fifteenth National Conference on Artificial Intelligence*, pages 776–783. AAAI Press/MIT Press, Menlo Park, CA, 1998.
- [1162] B. A. Julstrom. **What Have You Done for Me Lately? Adapting Operator Probabilities in a Steady-State Genetic Algorithm**. In L. J. Eshelman, editor, *ICGA*, pages 81–87. Morgan Kaufmann Publishers, San Francisco, CA, 1995.
- [1163] M. Jünger, G. Reinelt, and S. Thienel. **Provably Good Solutions for the Traveling Salesman Problem**. *Zeitschrift für Operations Research*, 40(2):183–217, 1994.
- [1164] E. A. Kabova, J. C. Cole, O. Korb, M. López-Ibáñez, A. C. Williams, and K. Shankland. **Improved performance of crystal structure solution from powder diffraction data through parameter tuning of a simulated annealing algorithm**. *Journal of Applied Crystallography*, 50(5):1411–1420, Oct. 2017. doi:10.1107/S1600576717012602.  
*Keywords*: crystal structure determination, powder diffraction, simulated annealing, parameter tuning, irace.
- [1165] J. Kacprzyk and W. Pedrycz, editors. *Springer Handbook of Computational Intelligence*. Springer, Berlin, Heidelberg, 2015.

- [1166] S. Kadioglu, Y. Malitsky, M. Sellmann, and K. Tierney. **ISAC: Instance-Specific Algorithm Configuration**. In H. Coelho, R. Studer, and M. Wooldridge, editors, *Proceedings of the 19th European Conference on Artificial Intelligence*, pages 751–756. IOS Press, 2010.
- [1167] D. Kahneman. **Maps of bounded rationality: Psychology for behavioral economics**. *American economic review*, 93(5):1449–1475, 2003.
- [1168] D. Kahneman and A. Tversky. **Prospect theory: An analysis of decision under risk**. *Econometrica*, 47(2):263–291, 1979. doi:10.2307/1914185.
- [1169] H. Kaji, K. Ikeda, and H. Kita. **Avoidance of constraint violation for experiment-based evolutionary multi-objective optimization**. In *Proceedings of the 2009 Congress on Evolutionary Computation (CEC 2009)*, pages 2756–2763, Piscataway, NJ, 2009. IEEE Press. doi:10.1109/CEC.2009.4983288.  
*Keywords:* evolutionary computation;constraint violation;experiment-based evolutionary multiobjective optimization;evolutionary algorithm;risky-constraint violation;Constraint optimization;Diesel engines;Calibration;Evolutionary computation;Electric breakdown;Optimization methods;Uncertainty;Computational fluid dynamics;Cost function;Temperature.
- [1170] J. Kallrath, editor. *Modeling Languages in Mathematical Optimization*, volume 88 of *Applied Optimization*. Kluwer Academic Publishers, 2004.
- [1171] Q. Kang, H. He, and J. Wei. **An Effective Iterated Greedy Algorithm for Reliability-oriented Task Allocation in Distributed Computing Systems**. *Journal of Parallel and Distributed Computing*, 73(8):1106–1115, 2013.
- [1172] D. Karaboga and B. Akay. **A Survey: Algorithms Simulating Bee Swarm Intelligence**. *Artificial Intelligence Review*, 31(1–4):61–85, 2009.
- [1173] K. Karabulut. **A hybrid iterated greedy algorithm for total tardiness minimization in permutation flowshops**. *Computers and Industrial Engineering*, 98(Supplement C):300 – 307, 2016.
- [1174] K. Karabulut and F. M. Tasgetiren. **A Variable Iterated Greedy Algorithm for the Traveling Salesman Problem with Time Windows**. *Information Sciences*, 279: 383–395, 2014.
- [1175] G. Karafotias, S. K. Smit, and A. E. Eiben. **A generic approach to parameter control**. In D. C. C. et al., editors, *Applications of Evolutionary Computation, EvoApplications 2012*, volume 7248 of *Lecture Notes in Computer Science*, pages 366–375. Springer, Heidelberg, Germany, 2012. doi:10.1007/978-3-642-29178-4\_37.
- [1176] G. Karafotias, A. E. Eiben, and M. Hoogendoorn. **Generic parameter control with reinforcement learning**. In C. Igel and D. V. Arnold, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2014*, pages 1319–1326. ACM Press, New York, NY, 2014.
- [1177] G. Karafotias, M. Hoogendoorn, and A. E. Eiben. **Parameter Control in Evolutionary Algorithms: Trends and Challenges**. *IEEE Transactions on Evolutionary Computation*, 19(2):167–187, 2015.

- [1178] G. Karafotias, M. Hoogendoorn, and A. E. Eiben. **Evaluating reward definitions for parameter control.** In A. M. Mora and G. Squillero, editors, *Applications of Evolutionary Computation, EvoApplications 2015*, volume 9028 of *Lecture Notes in Computer Science*, pages 667–680. Springer, Heidelberg, Germany, 2015. doi:10.1007/978-3-319-16549-3\_54.
- [1179] İ. Karahan and M. Köksalan. **A territory defining multiobjective evolutionary algorithms and preference incorporation.** *IEEE Transactions on Evolutionary Computation*, 14(4):636–664, 2010. doi:10.1109/TEVC.2009.2033586.  
Keywords: TDEA.
- [1180] E. Karpas, S. Jiménez Celorrio, and S. Kambhampati, editors. *Proceedings of the 3rd Workshop on Learning and Planning, collocated with the 21st International Conference on Automated Planning and Scheduling (ICAPS-PAL’11)*, 2011.
- [1181] O. Karpenko, J. Shi, and Y. Dai. **Prediction of MHC class II binders using the ant colony search strategy.** *Artificial Intelligence in Medicine*, 35(1):147–156, 2005.
- [1182] J. R. Kasprzyk, P. M. Reed, G. W. Characklis, and B. R. Kirsch. **Many-objective de Novo water supply portfolio planning under deep uncertainty.** *Environmental Modelling & Software*, 34:87–104, 2012.
- [1183] J. R. Kasprzyk, S. Nataraj, P. M. Reed, and R. J. Lempert. **Many objective robust decision making for complex environmental systems undergoing change.** *Environmental Modelling & Software*, 42:55–71, 2013.
- [1184] K. Katayama and H. Narihisa. **Iterated Local Search Approach using Genetic Transformation to the Traveling Salesman Problem.** In W. Banzhaf, J. M. Daida, A. E. Eiben, M. H. Garzon, V. Honavar, M. J. Jakiela, and R. E. Smith, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 1999*, volume 1, pages 321–328. Morgan Kaufmann Publishers, San Francisco, CA, 1999.
- [1185] S. A. Kauffman. *The Origins of Order*. Oxford University Press, 1993.
- [1186] H. A. Kautz and B. W. Porter, editors. *Proceedings of the Seventeenth National Conference on Artificial Intelligence and Twelfth Conference on Innovative Applications of Artificial Intelligence, July 30 – August 3, 2000, Austin, Texas, USA, 2000*. AAAI Press/MIT Press, Menlo Park, CA, 2000.
- [1187] M. D. Kazantzis, A. R. Simpson, D. Kwong, and S. M. Tan. **A new methodology for optimizing the daily operations of a pumping plant.** In *Proceedings of 2002 Conference on Water Resources Planning*, Roanoke, USA, May 2002. ASCE.
- [1188] L. Ke, C. Archetti, and Z. Feng. **Ants can solve the team orienteering problem.** *Computers and Industrial Engineering*, 54(3):648–665, 2008. doi:10.1016/j.cie.2007.10.001.  
Keywords: Ant colony optimization, Ant system, Heuristics, Team orienteering problem.
- [1189] L. Ke, Z. Feng, Z. Xu, K. Shang, and Y. Wang. **A multiobjective ACO algorithm for rough feature selection.** In *Circuits, Communications and System (PACCS), 2010 Second Pacific-Asia Conference on*, volume 1, pages 207–210, 2010.

- [1190] E. Kee, S. Airey, and W. Cyre. **An adaptive genetic algorithm.** In E. D. Goodman, editor, *Proceedings of the 3rd Annual Conference on Genetic and Evolutionary Computation, GECCO 2001*, pages 391–397. Morgan Kaufmann Publishers, San Francisco, CA, 2001.
- [1191] R. L. Keeney. **Analysis of preference dependencies among objectives.** *Operations Research*, 29:1105–1120, 1981.
- [1192] R. E. Keller and R. Poli. **Linear genetic programming of parsimonious metaheuristics.** In *2007 IEEE Congress on Evolutionary Computation*, pages 4508–4515, 2007. doi:10.1109/CEC.2007.4425062.
- [1193] R. E. Keller and R. Poli. **Cost-Benefit Investigation of a Genetic-Programming Hyperheuristic.** In E. Lutton, P. Legrand, P. Parrend, N. Monmarché, and M. Schoenauer, editors, *EA 2017: Artificial Evolution*, volume 10764 of *Lecture Notes in Computer Science*, pages 13–24. Springer, Heidelberg, Germany, 2017.
- [1194] H. Kellerer, U. Pferschy, and D. Pisinger. *Knapsack problems*. Springer, 2004.
- [1195] G. Kendall, G. V. Berghe, and B. McCollum, editors. *Multidisciplinary International Conference on Scheduling: Theory and Applications (MISTA 2013)*, Gent, Belgium, 2013.
- [1196] G. Kendall, R. Bai, J. Blazewicz, P. De Causmaecker, M. Gendreau, R. John, J. Li, B. McCollum, E. Pesch, R. Qu, N. R. Sabar, G. V. Berghe, and A. Yee. **Good Laboratory Practice for Optimization Research.** *Journal of the Operational Research Society*, 67(4):676–689, 2016.
- [1197] M. G. Kendall. *Rank correlation methods*. Griffin, London, 1948.
- [1198] J. Kennedy and R. C. Eberhart. **Particle Swarm Optimization.** In *Proceedings of IEEE International Conference on Neural Networks*, pages 1942–1948, Piscataway, NJ, USA, 1995. IEEE Press.
- [1199] J. Kennedy and R. C. Eberhart. **A discrete binary version of the particle swarm algorithm.** In *Proceedings of the 1997 IEEE International Conference on Systems, Man, and Cybernetics*, pages 4104 – 4108, Piscataway, NJ, USA, 1997. IEEE Press.
- [1200] J. Kennedy, R. C. Eberhart, and Y. Shi. *Swarm Intelligence*. Morgan Kaufmann Publishers, San Francisco, CA, 2001.
- [1201] B. W. Kernighan and S. Lin. **An Efficient Heuristic Procedure for Partitioning Graphs.** *Bell Systems Technology Journal*, 49(2):213–219, 1970.
- [1202] M. Kerrisk. **pthread - POSIX Threads.** In *Linux Programmer’s Manual*, Section 7. <http://www.linux-man-pages.org/man7/pthreads/>, 2005. (Last accessed May 15 2008).
- [1203] P. Kerschke and H. Trautmann. **The R-package FLACCO for exploratory landscape analysis with applications to multi-objective optimization problems.** In *Proceedings of the 2016 Congress on Evolutionary Computation (CEC 2016)*, pages 5262–5269, Piscataway, NJ, 2016. IEEE Press. ISBN 978-1-5090-0623-6. doi:10.1109/CEC.2016.7748359.



- [1204] P. Kerschke and H. Trautmann. **Automated Algorithm Selection on Continuous Black-Box Problems by Combining Exploratory Landscape Analysis and Machine Learning.** *Evolutionary Computation*, 27(1):99–127, 2019. doi:10.1162/evco\_a\_00236.
- [1205] P. Kerschke, H. Wang, M. Preuss, C. Grimme, A. H. Deutz, H. Trautmann, and M. Emmerich. **Towards Analyzing Multimodality of Continuous Multiobjective Landscapes.** In J. Handl, E. Hart, P. R. Lewis, M. López-Ibáñez, G. Ochoa, and B. Paechter, editors, *Parallel Problem Solving from Nature - PPSN XIV*, volume 9921 of *Lecture Notes in Computer Science*, pages 962–972. Springer, Heidelberg, Germany, 2016. ISBN 978-3-319-45822-9. doi:10.1007/978-3-319-45823-6\_90.
- [1206] P. Kerschke, H. H. Hoos, F. Neumann, and H. Trautmann. **Automated Algorithm Selection: Survey and Perspectives.** *Evolutionary Computation*, 27(1):3–45, 2019.
- [1207] V. Khare, X. Yao, and K. Deb. **Performance Scaling of Multi-objective Evolutionary Algorithms.** In C. M. Fonseca, P. J. Fleming, E. Zitzler, K. Deb, and L. Thiele, editors, *Evolutionary Multi-criterion Optimization, EMO 2003*, volume 2632 of *Lecture Notes in Computer Science*, pages 376–390. Springer, Heidelberg, Germany, 2003.
- [1208] M. Khichane, P. Albert, and C. Solmon. **Integration of ACO in a Constraint Programming Language.** In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 6th International Conference, ANTS 2008*, volume 5217 of *Lecture Notes in Computer Science*, pages 84–95. Springer, Heidelberg, Germany, 2008.
- [1209] M. Khichane, P. Albert, and C. Solmon. **An ACO-Based Reactive Framework for Ant Colony Optimization: First Experiments on Constraint Satisfaction Problems.** In T. Stützle, editor, *Learning and Intelligent Optimization, Third International Conference, LION 3*, volume 5851 of *Lecture Notes in Computer Science*, pages 119–133. Springer, Heidelberg, Germany, 2009.
- [1210] A. R. KhudaBukhsh, L. Xu, H. H. Hoos, and K. Leyton-Brown. **SATenstein: Automatically Building Local Search SAT Solvers from Components.** In C. Boutilier, editor, *Proceedings of the Twenty-First International Joint Conference on Artificial Intelligence (IJCAI-09)*, pages 517–524. AAAI Press, Menlo Park, CA, 2009.
- [1211] A. R. KhudaBukhsh, L. Xu, H. H. Hoos, and K. Leyton-Brown. **SATenstein: Automatically Building Local Search SAT Solvers from Components.** *Artificial Intelligence*, 232:20–42, 2016.
- [1212] P. Kilby and T. Urli. **Fleet design optimisation from historical data using constraint programming and large neighbourhood search.** *Constraints*, pages 1–20, 2015. doi:10.1007/s10601-015-9203-0.  
Keywords: F-race.
- [1213] J.-S. Kim, J.-H. Park, and D.-H. Lee. **Iterated Greedy Algorithms to Minimize the Total Family Flow Time for Job-shop Scheduling with Job Families and Sequence-dependent Set-ups.** *Engineering Optimization*, 49(10):1719–1732, 2017.
- [1214] Y.-D. Kim. **Heuristics for Flowshop Scheduling Problems Minimizing Mean Tardiness.** *Journal of the Operational Research Society*, 44(1):19–28, 1993. doi:10.1057/jors.1993.3.

- [1215] D. P. Kingma and J. Ba. **Adam: A method for stochastic optimization**. *Arxiv preprint arXiv:1412.6980 [cs.LG]*, 2014. URL <https://arxiv.org/abs/1412.6980>.  
*Annotation:* Published as a conference paper at the 3rd International Conference for Learning Representations, San Diego, 2015.
- [1216] S. Kirkpatrick. **Optimization by Simulated Annealing: Quantitative Studies**. *Journal of Statistical Physics*, 34(5-6):975–986, 1984.
- [1217] S. Kirkpatrick and G. Toulouse. **Configuration Space Analysis of Travelling Salesman Problems**. *Journal de Physique*, 46(8):1277–1292, 1985.
- [1218] S. Kirkpatrick, C. D. Gelatt, and M. P. Vecchi. **Optimization by Simulated Annealing**. *Science*, 220:671–680, 1983.
- [1219] K. Klamroth, J. D. Knowles, G. Rudolph, and M. M. Wiecek, editors. *Personalized Multiobjective Optimization: An Analytics Perspective (Dagstuhl Seminar 18031)*, volume 8(1) of *Dagstuhl Reports*. Schloss Dagstuhl–Leibniz-Zentrum für Informatik, Germany, 2018. doi:10.4230/DagRep.8.1.33.  
*Keywords:* multiple criteria decision making, evolutionary multiobjective optimization.
- [1220] A. J. Kleywegt, A. Shapiro, and T. Homem-de-Mello. **The Sample Average Approximation Method for Stochastic Discrete Optimization**. *SIAM Journal on Optimization*, 12(2):479–502, 2002.
- [1221] J. D. Knowles. *Local-Search and Hybrid Evolutionary Algorithms for Pareto Optimization*. PhD thesis, University of Reading, UK, 2002.  
*Annotation:* (Examiners: Prof. K. Deb and Prof. K. Warwick).
- [1222] J. D. Knowles. **A summary-attainment-surface plotting method for visualizing the performance of stochastic multiobjective optimizers**. In A. Abraham and M. Paprzycki, editors, *Proceedings of the 5th International Conference on Intelligent Systems Design and Applications*, pages 552–557, 2005. doi:10.1109/ISDA.2005.15.  
*Annotation:* [http://dbkgroup.org/knowles/plot\\_attainments/](http://dbkgroup.org/knowles/plot_attainments/).
- [1223] J. D. Knowles. **ParEGO: A hybrid algorithm with on-line landscape approximation for expensive multiobjective optimization problems**. *IEEE Transactions on Evolutionary Computation*, 10(1):50–66, 2006.  
*Keywords:* ParEGO, online, metamodel.
- [1224] J. D. Knowles. **Closed-loop evolutionary multiobjective optimization**. *IEEE Computational Intelligence Magazine*, 4:77–91, 2009. doi:10.1109/MCI.2009.933095.
- [1225] J. D. Knowles and D. Corne. **The Pareto Archived Evolution Strategy: A New Baseline Algorithm for Multiobjective Optimisation**. In *Proceedings of the 1999 Congress on Evolutionary Computation (CEC 1999)*, pages 98–105. IEEE Press, Piscataway, NJ, 1999.  
*Annotation:* first mention of Adaptive Grid Archiving.
- [1226] J. D. Knowles and D. Corne. **Approximating the Nondominated Front Using the Pareto Archived Evolution Strategy**. *Evolutionary Computation*, 8(2):149–172, 2000. doi:10.1162/106365600568167.

- [1227] J. D. Knowles and D. Corne. **On Metrics for Comparing Non-Dominated Sets.** In *Proceedings of the 2002 Congress on Evolutionary Computation (CEC'02)*, pages 711–716. IEEE Press, Piscataway, NJ, 2002.
- [1228] J. D. Knowles and D. Corne. **Instance Generators and Test Suites for the Multiobjective Quadratic Assignment Problem.** In C. M. Fonseca, P. J. Fleming, E. Zitzler, K. Deb, and L. Thiele, editors, *Evolutionary Multi-criterion Optimization, EMO 2003*, volume 2632 of *Lecture Notes in Computer Science*, pages 295–310. Springer, Heidelberg, Germany, 2003.
- [1229] J. D. Knowles and D. Corne. **Properties of an Adaptive Archiving Algorithm for Storing Nondominated Vectors.** *IEEE Transactions on Evolutionary Computation*, 7(2):100–116, Apr. 2003.
- [1230] J. D. Knowles and D. Corne. **Bounded Pareto Archiving: Theory and Practice.** In X. Gandibleux, M. Sevaux, K. Sörensen, and V. T'Kindt, editors, *Metaheuristics for Multiobjective Optimisation*, volume 535 of *Lecture Notes in Economics and Mathematical Systems*, pages 39–64. Springer, Berlin, Germany, 2004. doi:10.1007/978-3-642-17144-4\_2.
- [1231] J. D. Knowles and D. Corne. **Memetic algorithms for multiobjective optimization: issues, methods and prospects.** In H. W. E., S. J. E., and K. N., editors, *Recent Advances in Memetic Algorithms*, volume 166 of *Studies in Fuzziness and Soft Computing*, pages 313–352. Springer, Berlin, Heidelberg, 2005. doi:10.1007/3-540-32363-5\_14.
- [1232] J. D. Knowles, D. Corne, and M. Fleischer. **Bounded archiving using the Lebesgue measure.** In *Proceedings of the 2003 Congress on Evolutionary Computation (CEC 2003)*, volume 4, pages 2490–2497. IEEE Press, Piscataway, NJ, Dec. 2003.
- [1233] J. D. Knowles, L. Thiele, and E. Zitzler. **A tutorial on the performance assessment of stochastic multiobjective optimizers.** TIK-Report 214, Computer Engineering and Networks Laboratory (TIK), Swiss Federal Institute of Technology (ETH), Zürich, Switzerland, Feb. 2006. Revised version.
- [1234] J. D. Knowles, D. Corne, and K. Deb. **Introduction: Problem solving, EC and EMO.** In J. D. Knowles, D. Corne, K. Deb, and D. R. Chair, editors, *Multiobjective Problem Solving from Nature*, Natural Computing Series, pages 1–28. Springer, 2008. doi:10.1007/978-3-540-72964-8\_1.
- [1235] J. D. Knowles, D. Corne, K. Deb, and D. R. Chair, editors. *Multiobjective Problem Solving from Nature*. Natural Computing Series. Springer, 2008.
- [1236] J. D. Knowles, D. Corne, and A. P. Reynolds. **Noisy Multiobjective Optimization on a Budget of 250 Evaluations.** In M. Ehrgott, C. M. Fonseca, X. Gandibleux, J.-K. Hao, and M. Sevaux, editors, *Evolutionary Multi-criterion Optimization, EMO 2009*, volume 5467 of *Lecture Notes in Computer Science*, pages 36–50. Springer, Heidelberg, Germany, 2009.
- [1237] G. A. Kochenberger, F. Glover, B. Alidaee, and C. Rego. **A unified modeling and solution framework for combinatorial optimization problems.** *OR Spektrum*, 26(2):237–250, 2004.
- [1238] M. Köksalan. **Multiobjective Combinatorial Optimization: Some Approaches.** *Journal of Multi-Criteria Decision Analysis*, 15:69–78, 2009. doi:10.1002/mcda.425.

- [1239] M. Köksalan and İ. Karahan. **An Interactive Territory Defining Evolutionary Algorithm: iTDEA**. *IEEE Transactions on Evolutionary Computation*, 14(5):702–722, Oct. 2010. doi:10.1109/TEVC.2010.2070070.
- [1240] A. Kolen and E. Pesch. **Genetic Local Search in Combinatorial Optimization**. *Discrete Applied Mathematics*, 48(3):273–284, 1994.
- [1241] R. Kolisch and S. Hartmann. **Experimental investigation of heuristics for resource-constrained project scheduling: An update**. *European Journal of Operational Research*, 174(1):23–37, Oct. 2006. doi:10.1016/j.ejor.2005.01.065.  
*Keywords:* Computational evaluation, Heuristics, Project scheduling, Resource constraints.
- [1242] J. B. Kollat and P. M. Reed. **A framework for visually interactive decision-making and design using evolutionary multi-objective optimization (VIDEO)**. *Environmental Modelling & Software*, 22(12):1691–1704, 2007.  
*Keywords:* glyph plot.
- [1243] T. C. Koopmans and M. J. Beckmann. **Assignment Problems and the Location of Economic Activities**. *Econometrica*, 25:53–76, 1957.
- [1244] O. Korb, T. Stützle, and T. E. Exner. **PLANTS: Application of ant colony optimization to structure-based drug design**. In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 5th International Workshop, ANTS 2006*, volume 4150 of *Lecture Notes in Computer Science*, pages 247–258. Springer, Heidelberg, Germany, 2006. doi:10.1007/11839088\_22.
- [1245] O. Korb, T. Stützle, and T. E. Exner. **An Ant Colony Optimization Approach to Flexible Protein–Ligand Docking**. *Swarm Intelligence*, 1(2):115–134, 2007.
- [1246] O. Korb, T. Stützle, and T. E. Exner. **Empirical Scoring Functions for Advanced Protein-Ligand Docking with PLANTS**. *Journal of Chemical Information and Modeling*, 49(2):84–96, 2009.
- [1247] O. Korb, P. Monecke, G. Hessler, T. Stützle, and T. E. Exner. **pharmACOpore: Multiple Flexible Ligand Alignment Based on Ant Colony Optimization**. *Journal of Chemical Information and Modeling*, 50(9):1669–1681, 2010.
- [1248] F. Korn, B.-U. Pagel, and C. Faloutsos. **On the "dimensionality curse" and the "self-similarity blessing"**. *IEEE Transactions on Knowledge and Data Engineering*, 13(1):96–111, 2001.
- [1249] J. Kornbluth. **Sequential multi-criterion decision making**. *Omega*, 13(6):569–574, 1985. doi:10.1016/0305-0483(85)90045-3.  
*Keywords:* machine decision making.
- [1250] P. Korošec, J. Šilc, and B. Robič. **Mesh-Partitioning with the Multiple Ant-Colony Algorithm**. In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 4th International Workshop, ANTS 2004*, volume 3172 of *Lecture Notes in Computer Science*, pages 430–431. Springer, Heidelberg, Germany, 2004.
- [1251] P. Korošec, J. Šilc, and B. Robič. **Solving the mesh-partitioning problem with an ant-colony algorithm**. *Parallel Computing*, 30:785–801, 2004.

- [1252] P. Korošec, J. Šilc, K. Oblak, and F. Kosel. **The differential ant-stigmergy algorithm: an experimental evaluation and a real-world application.** In *Proceedings of the 2007 Congress on Evolutionary Computation (CEC 2007)*, pages 157–164. IEEE Press, Piscataway, NJ, 2007.
- [1253] L. Kotthoff. **Algorithm Selection for Combinatorial Search Problems: A Survey.** *AI Magazine*, 35(3):48–60, 2014.
- [1254] L. Kotthoff, C. Thornton, H. H. Hoos, F. Hutter, and K. Leyton-Brown. **Auto-WEKA 2.0: Automatic model selection and hyperparameter optimization in WEKA.** *Journal of Machine Learning Research*, 17:1–5, 2016.
- [1255] T. Kötzing, F. Neumann, H. Röglin, and C. Witt. **Theoretical Analysis of Two ACO Approaches for the Traveling Salesman Problem.** *Swarm Intelligence*, 6(1):1–21, 2012. doi:10.1007/s11721-011-0059-7.
- [1256] P. Kouvelis and G. Yu. *Robust discrete optimization and its applications.* Nonconvex optimization and its applications. Kluwer Academic Publishers, Dordrecht, The Netherlands, 1997.
- [1257] O. Kovářik and M. Skrbek. **Ant Colony Optimization with Castes.** In V. Kurkova-Pohlova and J. Koutník, editors, *ICANN’08: Proceedings of the 18th International Conference on Artificial Neural Networks, Part I*, volume 5163 of *Lecture Notes in Computer Science*, pages 435–442. Springer, Heidelberg, Germany, 2008.
- [1258] K. Kowalski, S. Stagl, R. Madlener, and I. Omann. **Sustainable energy futures: Methodological challenges in combining scenarios and participatory multi-criteria analysis.** *European Journal of Operational Research*, 197(3):1063–1074, 2009.
- [1259] J. Koza. *Genetic Programming: On the Programming of Computers By the Means of Natural Selection.* MIT Press, Cambridge, MA, 1992.
- [1260] J. R. Koza, editor. *Genetic Programming 1998: Proceedings of the Third Annual Conference, Late Breaking Papers*, Stanford University, California, July 1998. Stanford University Bookstore.
- [1261] S. Koziel and X.-S. Yang, editors. *Computational Optimization, Methods and Algorithms*, volume 356 of *Studies in Computational Intelligence*. Springer, Berlin/Heidelberg, 2011.
- [1262] S. Koziel, D. E. Ciaurri, and L. Leifsson. **Surrogate-Based Methods.** In S. Koziel and X.-S. Yang, editors, *Computational Optimization, Methods and Algorithms*, volume 356 of *Studies in Computational Intelligence*, pages 33–59. Springer, Berlin/Heidelberg, 2011.
- [1263] D. Krajzewicz, J. Erdmann, M. Behrisch, and L. Bieker. **Recent development and applications of SUMO - Simulation of Urban MObility.** *International Journal On Advances in Systems and Measurements*, 5(3-4):128–138, 2012.
- [1264] D. Krajzewicz, M. Heinrich, M. Milano, P. Bellavista, T. Stützle, J. Härri, T. Spyropoulos, R. Blokpoel, S. Hausberger, and M. Fellendorf. **COLOMBO: Investigating the Potential of V2X for Traffic Management Purposes assuming low penetration Rates.** In *Proceedings of ITS Europe 2013*, Dublin, Ireland, 2013.



- [1265] D. Krajzewicz, A. Leich, R. Blokpoel, M. Milano, and T. Stützle. **COLOMBO: Exploiting Vehicular Communications at Low Equipment Rates for Traffic Management Purposes**. In T. Schulze, B. Müller, and G. Meyer, editors, *Advanced Microsystems for Automotive Applications 2015: Smart Systems for Green and Automated Driving*, pages 117–130. Springer International Publishing, Cham, Switzerland, 2016.
- [1266] O. Kramer. **Iterated Local Search with Powell’s Method: A Memetic Algorithm for Continuous Global Optimization**. *Memetic Computing*, 2(1):69–83, 2010. doi:10.1007/s12293-010-0032-9.
- [1267] J. Krarup and P. M. Pruzan. **Computer-aided Layout Design**. In M. L. Balinski and C. Lemarechal, editors, *Mathematical Programming in Use*, volume 9 of *Mathematical Programming Studies*, pages 75–94. Springer, Berlin/Heidelberg, Berlin, Heidelberg, 1978.
- [1268] N. Krasnogor and P. L. Lanzi, editors. *Genetic and Evolutionary Computation Conference, GECCO 2011, Proceedings, Dublin, Ireland, July 12-16, 2011*. ACM Press, New York, NY, 2011.
- [1269] N. Krasnogor and P. L. Lanzi, editors. *13th Annual Genetic and Evolutionary Computation Conference, GECCO 2011, Companion Material Proceedings, Dublin, Ireland, July 12-16, 2011*. ACM Press, New York, NY, 2011.
- [1270] N. Krasnogor, B. Melián-Batista, J. A. Moreno-Pérez, J. M. Moreno-Vega, and D. A. Pelta, editors. *Nature Inspired Cooperative Strategies for Optimization (NICSO 2008)*, volume 236 of *Studies in Computational Intelligence*. Springer, Berlin, Germany, 2009. doi:10.1007/978-3-642-03211-0.
- [1271] S. Kreipl. **A Large Step Random Walk for Minimizing Total Weighted Tardiness in a Job Shop**. *Journal of Scheduling*, 3(3):125–138, 2000.
- [1272] J. Krettek, J. Braun, F. Hoffmann, and T. Bertram. **Interactive Incorporation of User Preferences in Multiobjective Evolutionary Algorithms**. In J. Mehnen, M. Köppen, A. Saad, and A. Tiwari, editors, *Applications of Soft Computing*, volume 58 of *Advances in Intelligent and Soft Computing*, pages 379–388. Springer, Berlin/Heidelberg, 2009.
- [1273] J. Krettek, J. Braun, F. Hoffmann, and T. Bertram. **Preference Modeling and Model Management for Interactive Multi-objective Evolutionary Optimization**. In E. Hüllermeier, R. Kruse, and F. Hoffmann, editors, *Information Processing and Management of Uncertainty, 13th International Conference, IPMU2010*, volume 6178 of *Lecture Notes in Artificial Intelligence*, pages 574–583. Springer, Heidelberg, Germany, 2010.
- [1274] S. Kritzing, F. Tricoire, K. F. Doerner, R. F. Hartl, and T. Stützle. **A Unified Framework for Routing Problems with a Fixed Fleet Size**. *International Journal of Metaheuristics*, 6(3):160–209, 2017.
- [1275] W. H. Kruskal and J. M. Tanur. *Linear Hypotheses*, volume 1. Free Press, 1978.
- [1276] J. Kuhpfahl and C. Bierwirth. **A Study on Local Search Neighborhoods for the Job Shop Scheduling Problem with Total Weighted Tardiness Objective**. *Computers & Operations Research*, 66:44–57, 2016.

- [1277] B. Kuipers and B. L. Webber, editors. *Proceedings of the Fourteenth National Conference on Artificial Intelligence and Ninth Innovative Applications of Artificial Intelligence Conference, AAAI 97, IAAI 97, July 27-31, 1997, Providence, Rhode Island, 1997*. AAAI Press/MIT Press, Menlo Park, CA.
- [1278] S. Kukkonen and J. Lampinen. **GDE3: the third evolution step of generalized differential evolution**. In *Proceedings of the 2005 Congress on Evolutionary Computation (CEC 2005)*, pages 443–450. IEEE Press, Piscataway, NJ, Sept. 2005.
- [1279] R. Kumar and P. K. Singh. **Pareto Evolutionary Algorithm Hybridized with Local Search for Biobjective TSP**. *Studies in Computational Intelligence*, 75:361–398, 2007.
- [1280] R. Kumar and S. Vassilvitskii. **Generalized Distances between Rankings**. In M. Rappa, P. Jones, J. Freire, and S. Chakrabarti, editors, *Proceedings of the 19th International Conference on World Wide Web, WWW 2010*. ACM Press, New York, NY, 2010.
- [1281] H. T. Kung, F. Luccio, and F. P. Preparata. **On Finding the Maxima of a Set of Vectors**. *Journal of the ACM*, 22(4):469–476, 1975.
- [1282] V. Kurkova-Pohlova and J. Koutnik, editors. *ICANN’08: Proceedings of the 18th International Conference on Artificial Neural Networks, Part I*, volume 5163 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2008.
- [1283] V. Kurkova-Pohlova and J. Koutnik, editors. *ICANN’08: Proceedings of the 18th International Conference on Artificial Neural Networks, Part II*, volume 5164 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2008.
- [1284] F. Kursawe. **A variant of evolution strategies for vector optimization**. In H.-P. Schwefel and R. Männer, editors, *Proceedings of PPSN-I, First International Conference on Parallel Problem Solving from Nature*, pages 193–197, Berlin, Heidelberg, 1991. Springer. doi:10.1007/BFb0029752.
- [1285] I. Kurtulus and E. W. Davis. **Multi-Project Scheduling: Categorization of Heuristic Rules Performance**. *Management Science*, 28(2):161–172, 1982. doi:10.1287/mnsc.28.2.161.  
Keywords: project management, research and development.
- [1286] J. H. Kwakkel. **The Exploratory Modeling Workbench: An open source toolkit for exploratory modeling, scenario discovery, and (multi-objective) robust decision making**. *Environmental Modelling & Software*, 96:239–250, 2017.
- [1287] M. Labbé and A. Violin. **Bilevel programming and price setting problems**. *4OR*, 11(1):1–30, 2013. doi:10.1007/s10288-012-0213-0.
- [1288] M. Labbé, P. Marcotte, and G. Savard. **A Bilevel Model of Taxation and Its Application to Optimal Highway Pricing**. *Management Science*, 44(12):1608–1622, 1998. doi:10.1287/mnsc.44.12.1608.
- [1289] B. Lacroix, D. Molina, and F. Herrera. **Dynamically updated region based memetic algorithm for the 2013 CEC Special Session and Competition on Real Parameter Single Objective Optimization**. In *Proceedings of the 2013 Congress on Evolutionary Computation (CEC 2013)*, pages 1945–1951. IEEE Press, Piscataway, NJ, 2013.

- [1290] B. Lacroix, D. Molina, and F. Herrera. **Region based memetic algorithm for real-parameter optimisation**. *Information Sciences*, 262:15–31, 2014. doi:10.1016/j.ins.2013.11.032.  
*Keywords:* irace.
- [1291] S. R. Ladd. **ACOVEA (Analysis of Compiler Options via Evolutionary Algorithm)**. <https://github.com/Acovea/libacovea>, 2000.
- [1292] X. Lai and J.-K. Hao. **Iterated Maxima Search for the Maximally Diverse Grouping Problem**. *European Journal of Operational Research*, 254(3):780–800, 2016.
- [1293] A. H. Land and A. G. Doig. **An Automatic Method of Solving Discrete Programming Problems**. *Econometrica*, 28(3):497–520, 1960.
- [1294] M. Lang, H. Kotthaus, P. Marwedel, C. Weihs, J. Rahnenführer, and B. Bischl. **Automatic model selection for high-dimensional survival analysis**. *Journal of Statistical Computation and Simulation*, 85(1):62–76, 2014. doi:10.1080/00949655.2014.929131.
- [1295] W. B. Langdon and M. Harman. **Optimising Software with Genetic Programming**. *IEEE Transactions on Evolutionary Computation*, 19(1):118–135, 2015.
- [1296] W. B. Langdon et al., editors. *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2002*. Morgan Kaufmann Publishers, San Francisco, CA, 2002.
- [1297] A. Langevin, M. Desrochers, J. Desrosiers, S. Gélinas, and F. Soumis. **A Two-Commodity Flow Formulation for the Traveling Salesman and Makespan Problems with Time Windows**. *Networks*, 23(7):631–640, 1993.
- [1298] K. E. Lansey and K. Awumah. **Optimal Pump Operations Considering Pump Switches**. *Journal of Water Resources Planning and Management, ASCE*, 120(1):17–35, Jan. / Feb. 1994.
- [1299] G. Laporte. **Fifty Years of Vehicle Routing**. *Transportation Science*, 43(4):408–416, 2009.
- [1300] J. L. J. Laredo, S. Silva, and A. I. Esparcia-Alcázar, editors. *Genetic and Evolutionary Computation Conference, GECCO 2015, Madrid, Spain, July 11-15, 2015, Companion Material Proceedings*. ACM Press, New York, NY, 2015.
- [1301] C. Larman. *Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and Iterative Development*. Prentice Hall, Englewood Cliffs, NJ, 3 edition, 2004.
- [1302] P. Larrañaga and J. A. Lozano. *Estimation of distribution algorithms: A new tool for evolutionary computation*. Kluwer Academic Publishers, Boston, 2002.
- [1303] A. LaTorre, S. Muelas, and J.-M. Peña. **A MOS-based dynamic memetic differential evolution algorithm for continuous optimization: a scalability test**. *Soft Computing*, 15(11):2187–2199, 2011.
- [1304] M. Laumanns. **Stochastic convergence of random search to fixed size Pareto set approximations**. *Arxiv preprint arXiv:0711.2949*, 2007.

- [1305] M. Laumanns and R. Zenklusen. **Stochastic convergence of random search methods to fixed size Pareto front approximations.** (submitted), Nov. 2010.
- [1306] M. Laumanns and R. Zenklusen. **Stochastic convergence of random search methods to fixed size Pareto front approximations.** *European Journal of Operational Research*, 213(2):414–421, 2011. doi:10.1016/j.ejor.2011.03.039.
- [1307] M. Laumanns, E. Zitzler, and L. Thiele. **A unified model for multi-objective evolutionary algorithms with elitism.** In *Proceedings of the 2000 Congress on Evolutionary Computation (CEC'00)*, pages 46–53, Piscataway, NJ, July 2000. IEEE Press.
- [1308] M. Laumanns, L. Thiele, K. Deb, and E. Zitzler. **Combining Convergence and Diversity in Evolutionary Multiobjective Optimization.** *Evolutionary Computation*, 10(3):263–282, 2002.
- [1309] M. Laumanns, L. Thiele, and E. Zitzler. **Running time analysis of multiobjective evolutionary algorithms on pseudo-boolean functions.** *IEEE Transactions on Evolutionary Computation*, 8(2):170–182, 2004.
- [1310] M. Laumanns, L. Thiele, and E. Zitzler. **Running time analysis of evolutionary algorithms on a simplified multiobjective knapsack problem.** *Natural Computing*, 3(1):37–51, 2004.
- [1311] B. Laurent and J.-K. Hao. **Iterated Local Search for the Multiple Depot Vehicle Scheduling Problem.** *Computers and Industrial Engineering*, 57(1):277–286, 2009.
- [1312] E. L. Lawler and D. E. Wood. **Branch-and-Bound Methods: A Survey.** *Operations Research*, 14(4):699–719, 1966. doi:10.1287/opre.14.4.699.
- [1313] E. L. Lawler, J. K. Lenstra, A. H. G. Rinnooy Kan, and D. B. Shmoys. *The Traveling Salesman Problem*. John Wiley & Sons, Chichester, UK, 1985.
- [1314] S. E. Lazic. **The problem of pseudoreplication in neuroscientific studies: is it affecting your analysis?** *BMC Neuroscience*, 11(5):397–407, 2004. doi:10.1186/1471-2202-11-5.
- [1315] V. Leal do Forte, F. M. Tavares Montenegro, J. A. de Moura Brito, and N. Maculan. **Iterated Local Search Algorithms for the Euclidean Steiner Tree Problem in  $n$  Dimensions.** *International Transactions in Operational Research*, 23(6):1185–1199, 2016.
- [1316] Y. LeCun, Y. Bengio, et al. **Convolutional networks for images, speech, and time series.** *The handbook of brain theory and neural networks*, 3361(10):1995, 1995.
- [1317] Y. LeCun, Y. Bengio, and G. Hinton. **Deep learning.** *Nature*, 521(7553):436–444, 2015.
- [1318] D. D. Lee, M. Sugiyama, U. V. Luxburg, I. Guyon, and R. Garnett, editors. *Advances in Neural Information Processing Systems 29: Annual Conference on Neural Information Processing Systems 2016, December 5-10, 2016, Barcelona, Spain*, 2016.
- [1319] G. Leguizamón and E. Alba. **Ant Colony Based Algorithms for Dynamic Optimization Problems.** In E. Alba, A. Nakib, and P. Siarry, editors, *Metaheuristics for Dynamic Optimization*, volume 433 of *Studies in Computational Intelligence*, pages 189–210. Springer, Berlin/Heidelberg, 2013. doi:10.1007/978-3-642-30665-5\_9.

- [1320] G. Leguizamón and Z. Michalewicz. **A New Version of Ant System for Subset Problems**. In *Proceedings of the 1999 Congress on Evolutionary Computation (CEC 1999)*, pages 1459–1464. IEEE Press, Piscataway, NJ, 1999.
- [1321] F. T. Leighton. **A Graph Coloring Algorithm for Large Scheduling Problems**. *Journal of Research of the National Bureau of Standards*, 84(6):489–506, 1979.
- [1322] R. J. Lempert, S. Popper, and S. C. Banks. *Shaping the Next One Hundred Years: New Methods for Quantitative, Long Term Policy Analysis*. RAND, 2003.
- [1323] R. J. Lempert, D. G. Groves, S. W. Popper, and S. C. Banks. **A general analytic method for generating robust strategies and narrative scenarios**. *Management Science*, 52(4):514–528, 2006.
- [1324] C. Leon, S. Martin, J. M. Elena, and J. Luque. **EXPLORE: Hybrid expert system for water networks management**. *Journal of Water Resources Planning and Management, ASCE*, 126(2):65–74, 2000.
- [1325] L. Lessing, I. Dumitrescu, and T. Stützle. **A Comparison Between ACO Algorithms for the Set Covering Problem**. In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 4th International Workshop, ANTS 2004*, volume 3172 of *Lecture Notes in Computer Science*, pages 1–12. Springer, Heidelberg, Germany, 2004.
- [1326] R. M. R. Lewis. *A Guide to Graph Colouring: Algorithms and Applications*. Springer, Cham, 2016. doi:10.1007/978-3-319-25730-3.
- [1327] K. Leyton-Brown, M. Pearson, and Y. Shoham. **Towards a Universal Test Suite for Combinatorial Auction Algorithms**. In A. Jhingran et al., editors, *ACM Conference on Electronic Commerce (EC-00)*, pages 66–76. ACM Press, New York, NY, 2000. doi:10.1145/352871.352879.  
Annotation: CPLEX-regions200 benchmark set, <http://www.cs.ubc.ca/labs/beta/Projects/ParamILS/results.html>.
- [1328] K. Leyton-Brown, E. Nudelman, and Y. Shoham. **Learning the Empirical Hardness of Optimization Problems: The Case of Combinatorial Auctions**. In P. van Hentenryck, editor, *Principles and Practice of Constraint Programming, CP 2002*, Lecture Notes in Computer Science, pages 556–572. Springer, Heidelberg, Germany, 2002.
- [1329] B. Li, J. Li, K. Tang, and X. Yao. **An Improved Two Archive Algorithm for Many-Objective Optimization**. In *Proceedings of the 2014 Congress on Evolutionary Computation (CEC 2014)*, pages 2869–2876, Piscataway, NJ, 2014. IEEE Press.
- [1330] B. Li, J. Li, K. Tang, and X. Yao. **Many-Objective Evolutionary Algorithms: A Survey**. *ACM Computing Surveys*, 48(1):1–35, 2015.
- [1331] H. Li and Q. Zhang. **Multiobjective Optimization Problems with Complicated Pareto sets, MOEA/D and NSGA-II**. *IEEE Transactions on Evolutionary Computation*, 13(2):284–302, 2009.
- [1332] J. D. Li. **A two-step rejection procedure for testing multiple hypotheses**. *Journal of Statistical Planning and Inference*, 138(6):1521–1527, 2008.

- [1333] L. Li, K. Jamieson, G. DeSalvo, A. Rostamizadeh, and A. Talwalkar. **Hyperband: A Novel Bandit-Based Approach to Hyperparameter Optimization.** *Journal of Machine Learning Research*, 18(185):1–52, 2018. URL <http://jmlr.org/papers/v18/16-558.html>.  
*Keywords:* racing.
- [1334] M. Li, S. Yang, X. Liu, and R. Shen. **A Comparative Study on Evolutionary Algorithms for Many-Objective Optimization.** In R. C. Purshouse, P. J. Fleming, C. M. Fonseca, S. Greco, and J. Shaw, editors, *Evolutionary Multi-criterion Optimization, EMO 2013*, volume 7811 of *Lecture Notes in Computer Science*, pages 261–275. Springer, Heidelberg, Germany, 2013. ISBN 978-3-642-37139-4.
- [1335] X. Li, L. Chen, H. Xu, and J. N. Gupta. **Trajectory Scheduling Methods for Minimizing Total Tardiness in a Flowshop.** *Operations Research Perspectives*, 2: 13–23, 2015. ISSN 2214–7160. doi:10.1016/j.orp.2014.12.001.
- [1336] X. Li et al., editors. *Simulated Evolution and Learning, 7th International Conference, SEAL 2008*, volume 5361 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2008.
- [1337] Y. Li and W. Li. **Adaptive Ant Colony Optimization Algorithm Based on Information Entropy: Foundation and Application.** *Fundamenta Informaticae*, 77(3):229–242, 2007.
- [1338] Z. Li, Y. Wang, J. Yu, Y. Zhang, and X. Li. **A Novel Cloud-Based Fuzzy Self-Adaptive Ant Colony System.** In *ICNC’08: Proceedings of the 2008 Fourth International Conference on Natural Computation*, volume 7, pages 460–465, Washington, DC, 2008. IEEE Computer Society.
- [1339] Z. Li, M. Shahidehpour, S. Bahramirad, and A. Khodaei. **Optimizing Traffic Signal Settings in Smart Cities.** *IEEE Transactions on Smart Grid*, 3053(4):1–1, 2016. doi:10.1109/TSG.2016.2526032.
- [1340] C.-J. Liao, C.-T. Tseng, and P. Luarn. **A Discrete Version of Particle Swarm Optimization for Flowshop Scheduling Problems.** *Computers & Operations Research*, 34(10):3099–3111, 2007.
- [1341] T. Liao. *Population-based Heuristic Algorithms for Continuous and Mixed Discrete-Continuous Optimization Problem.* PhD thesis, IRIDIA, École polytechnique, Université Libre de Bruxelles, Belgium, 2013.
- [1342] T. Liao and T. Stützle. **Benchmark results for a simple hybrid algorithm on the CEC 2013 benchmark set for real-parameter optimization.** In *Proceedings of the 2013 Congress on Evolutionary Computation (CEC 2013)*, pages 1938–1944. IEEE Press, Piscataway, NJ, 2013.
- [1343] T. Liao, D. Molina, M. A. Montes de Oca, and T. Stützle. **A Note on the Effects of Enforcing Bound Constraints on Algorithm Comparisons using the IEEE CEC’05 Benchmark Function Suite.** Technical Report TR/IRIDIA/2011-010, IRIDIA, Université Libre de Bruxelles, Belgium, 2011.
- [1344] T. Liao, D. Molina, M. A. Montes de Oca, and T. Stützle. **Computational Results for an Automatically Tuned IPOP-CMA-ES on the CEC’05 Benchmark Set.**



Technical Report TR/IRIDIA/2011-022, IRIDIA, Université Libre de Bruxelles, Belgium, 2011.

- [1345] T. Liao, M. A. Montes de Oca, D. Aydın, T. Stützle, and M. Dorigo. **An Incremental Ant Colony Algorithm with Local Search for Continuous Optimization**. In N. Krasnogor and P. L. Lanzi, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2011*, pages 125–132. ACM Press, New York, NY, 2011.
- [1346] T. Liao, M. A. Montes de Oca, and T. Stützle. **Tuning Parameters across Mixed Dimensional Instances: A Performance Scalability Study of Sep-G-CMA-ES**. In N. Krasnogor and P. L. Lanzi, editors, *GECCO (Companion)*, pages 703–706, New York, NY, 2011. ACM Press.  
*Annotation:* Workshop on Scaling Behaviours of Landscapes, Parameters and Algorithms.
- [1347] T. Liao, D. Aydın, and T. Stützle. **Artificial Bee Colonies for Continuous Optimization: Experimental Analysis and Improvements**. *Swarm Intelligence*, 7(4):327–356, 2013.
- [1348] T. Liao, M. A. Montes de Oca, and T. Stützle. **Computational results for an automatically tuned CMA-ES with increasing population size on the CEC’05 benchmark set**. *Soft Computing*, 17(6):1031–1046, 2013. doi:0.1007/s00500-012-0946-x.
- [1349] T. Liao, T. Stützle, M. A. Montes de Oca, and M. Dorigo. **A Unified Ant Colony Optimization Algorithm for Continuous Optimization**. Technical Report TR/IRIDIA/2013-002, IRIDIA, Université Libre de Bruxelles, Belgium, 2013.
- [1350] T. Liao, D. Molina, M. A. Montes de Oca, and T. Stützle. **A Note on the Effects of Enforcing Bound Constraints on Algorithm Comparisons using the IEEE CEC’05 Benchmark Function Suite**. *Evolutionary Computation*, 22(2):351–359, 2014.
- [1351] T. Liao, K. Socha, M. A. Montes de Oca, T. Stützle, and M. Dorigo. **Ant Colony Optimization for Mixed-Variable Optimization Problems**. *IEEE Transactions on Evolutionary Computation*, 18(4):503–518, 2014.
- [1352] T. Liao, T. Stützle, M. A. Montes de Oca, and M. Dorigo. **A Unified Ant Colony Optimization Algorithm for Continuous Optimization**. *European Journal of Operational Research*, 234(3):597–609, 2014.
- [1353] T. Liao, D. Molina, and T. Stützle. **Performance Evaluation of Automatically Tuned Continuous Optimizers on Different Benchmark Sets**. *Applied Soft Computing*, 27:490–503, 2015.
- [1354] A. Liefoghe and M. López-Ibáñez, editors. *Evolutionary Computation in Combinatorial Optimization – 18th European Conference, EvoCOP 2018, Parma, Italy, April 4-6, 2018, Proceedings*, volume 10782 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2018. doi:10.1007/978-3-319-77449-7.
- [1355] A. Liefoghe, S. Mesmoudi, J. Humeau, L. Jourdan, and E.-G. Talbi. **A Study on Dominance-based Local Search Approaches for Multiobjective Combinatorial Optimization**. In T. Stützle, M. Birattari, and H. H. Hoos, editors, *Engineering Stochastic Local Search Algorithms. Designing, Implementing and Analyzing Effective*

- Heuristics. SLS 2009*, volume 5752 of *Lecture Notes in Computer Science*, pages 120–124. Springer, Heidelberg, Germany, 2009.
- [1356] A. Liefvooghe, L. Jourdan, and E.-G. Talbi. **A Software Framework Based on a Conceptual Unified Model for Evolutionary Multiobjective Optimization: ParadisEO-MOEO**. *European Journal of Operational Research*, 209(2):104–112, 2011.
  - [1357] A. Liefvooghe, L. Paquete, M. Simões, and J. R. Figueira. **Connectedness and Local Search for Bicriteria Knapsack Problems**. In P. Merz and J.-K. Hao, editors, *Proceedings of EvoCOP 2011 – 11th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 6622 of *Lecture Notes in Computer Science*, pages 48–59. Springer, Heidelberg, Germany, 2011. doi:10.1007/978-3-642-20364-0\_5.
  - [1358] A. Liefvooghe, J. Humeau, S. Mesmoudi, L. Jourdan, and E.-G. Talbi. **On dominance-based multiobjective local search: design, implementation and experimental analysis on scheduling and traveling salesman problems**. *Journal of Heuristics*, 18(2):317–352, 2012. doi:10.1007/s10732-011-9181-3.
  - [1359] A. Liefvooghe, B. Derbel, S. Verel, H. E. Aguirre, and K. Tanaka. **Towards Landscape-Aware Automatic Algorithm Configuration: Preliminary Experiments on Neutral and Rugged Landscapes**. In H. Trautmann, G. Rudolph, K. Klamroth, O. Schütze, M. M. Wiecek, Y. Jin, and C. Grimme, editors, *Evolutionary Multi-criterion Optimization, EMO 2017*, Lecture Notes in Computer Science, pages 215–232. Springer International Publishing, Cham, Switzerland, 2017.
  - [1360] A. Liefvooghe, B. Derbel, S. Verel, M. López-Ibáñez, H. E. Aguirre, and K. Tanaka. **On Pareto Local Optimal Solutions Networks**. In A. Auger, C. M. Fonseca, N. Lourenço, P. Machado, L. Paquete, and D. Whitley, editors, *Parallel Problem Solving from Nature - PPSN XV*, volume 11102 of *Lecture Notes in Computer Science*, pages 232–244. Springer, Cham, 2018. doi:10.1007/978-3-319-99259-4\_19.
  - [1361] A. Liefvooghe, M. López-Ibáñez, L. Paquete, and S. Verel. **Dominance, Epsilon, and Hypervolume Local Optimal Sets in Multi-objective Optimization, and How to Tell the Difference**. In H. E. Aguirre and K. Takadama, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2018*, pages 324–331. ACM Press, New York, NY, 2018. doi:10.1145/3205455.3205572.
  - [1362] S. Lin and B. W. Kernighan. **An Effective Heuristic Algorithm for the Traveling Salesman Problem**. *Operations Research*, 21(2):498–516, 1973.
  - [1363] M. T. Lindauer, H. H. Hoos, F. Hutter, and T. Schaub. **AutoFolio: Algorithm Configuration for Algorithm Selection**. In B. Bonet and S. Koenig, editors, *AAAI*. AAAI Press, 2015.
  - [1364] M. T. Lindauer, H. H. Hoos, F. Hutter, and T. Schaub. **AutoFolio: An Automatically Configured Algorithm Selector**. *Journal of Artificial Intelligence Research*, 53: 745–778, 2015.
  - [1365] M. T. Lindauer, J. N. Van Rijn, and L. Kotthoff. **The algorithm selection competitions 2015 and 2017**. *Artificial Intelligence*, 272:86–100, 2019.
  - [1366] W. Ling and H. Luo. **An Adaptive Parameter Control Strategy for Ant Colony Optimization**. In *CIS'07: Proceedings of the 2007 International Conference on*

- Computational Intelligence and Security*, pages 142–146, Washington, DC, 2007. IEEE Computer Society.
- [1367] A. Lissovoi and C. Witt. **Runtime Analysis of Ant Colony Optimization on Dynamic Shortest Path Problems**. *Theoretical Computer Science*, 561(Part A):73–85, 2015. doi:[10.1016/j.tcs.2014.06.035](https://doi.org/10.1016/j.tcs.2014.06.035).
- [1368] J. D. C. Little, K. G. Murty, D. W. Sweeney, and C. Karel. **An Algorithm for the Traveling Salesman Problem**. *Operations Research*, 11:972–989, 1963.
- [1369] J. Liu and C. R. Reeves. **Constructive and Composite Heuristic Solutions to the P// $\Sigma$ Ci Scheduling Problem**. *European Journal of Operational Research*, 132(2): 439–452, 2001. doi:[10.1016/S0377-2217\(00\)00137-5](https://doi.org/10.1016/S0377-2217(00)00137-5).
- [1370] F. Lobo, C. F. Lima, and Z. Michalewicz, editors. *Parameter Setting in Evolutionary Algorithms*. Springer, Berlin, Germany, 2007.
- [1371] A. Lodi, S. Martello, and D. Vigo. **Heuristic and metaheuristic approaches for a class of two-dimensional bin packing problems**. *INFORMS Journal on Computing*, 11(4):345–357, 1999.
- [1372] A. Lodi, S. Martello, and D. Vigo. **TSPack: a unified tabu search code for multi-dimensional bin packing problems**. *Annals of Operations Research*, 131(1-4): 203–213, 2004.
- [1373] A. Lodi, M. Milano, and P. Toth, editors. *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 7th International Conference, CPAIOR 2010*, volume 6140 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2010.
- [1374] P.-L. Loh and S. Nowozin. **Faster Hoeffding Racing: Bernstein Races via Jackknife Estimates**. In S. Jain, R. Munos, F. Stephan, and T. Zeugmann, editors, *Proceedings of Algorithmic Learning Theory*, volume 8139 of *Lecture Notes in Computer Science*, pages 203–217, Berlin, Germany, 2013. Springer. doi:[10.1007/978-3-642-40935-6](https://doi.org/10.1007/978-3-642-40935-6).
- [1375] M. López-Ibáñez. *Multi-objective Ant Colony Optimization*. Diploma thesis, Intellectics Group, Computer Science Department, Technische Universität Darmstadt, Germany, 2004.
- [1376] M. López-Ibáñez. **High Performance Ant Colony Optimisation of the Pump Scheduling Problem**. In P. Alberigo, G. Erbacci, F. Garofalo, and S. Monfardini, editors, *Science and Sumpercomputing in Europe*, pages 371–375. CINECA, 2007. ISBN 978-88-86037-21-1.
- [1377] M. López-Ibáñez. *Operational Optimisation of Water Distribution Networks*. PhD thesis, School of Engineering and the Built Environment, Edinburgh Napier University, UK, 2009. URL <http://researchrepository.napier.ac.uk/id/eprint/3044>.
- [1378] M. López-Ibáñez and C. Blum. **Beam-ACO Based on Stochastic Sampling: A Case Study on the TSP with Time Windows**. Technical Report LSI-08-28, Department LSI, Universitat Politècnica de Catalunya, 2008. Extended version published in *Computers & Operations Research* [1380].

- [1379] M. López-Ibáñez and C. Blum. **Beam-ACO Based on Stochastic Sampling: A Case Study on the TSP with Time Windows**. In T. Stützle, editor, *Learning and Intelligent Optimization, Third International Conference, LION 3*, volume 5851 of *Lecture Notes in Computer Science*, pages 59–73. Springer, Heidelberg, Germany, 2009. doi:[10.1007/978-3-642-11169-3\\_5](https://doi.org/10.1007/978-3-642-11169-3_5).
- [1380] M. López-Ibáñez and C. Blum. **Beam-ACO for the travelling salesman problem with time windows**. *Computers & Operations Research*, 37(9):1570–1583, 2010. doi:[10.1016/j.cor.2009.11.015](https://doi.org/10.1016/j.cor.2009.11.015).  
*Keywords:* Ant colony optimization, Travelling salesman problem with time windows, Hybridization.
- [1381] M. López-Ibáñez and J. D. Knowles. **Machine Decision Makers as a Laboratory for Interactive EMO**. In A. Gaspar-Cunha, C. H. Antunes, and C. A. Coello Coello, editors, *Evolutionary Multi-criterion Optimization, EMO 2015 Part II*, volume 9019 of *Lecture Notes in Computer Science*, pages 295–309. Springer, Heidelberg, Germany, 2015. doi:[10.1007/978-3-319-15892-1\\_20](https://doi.org/10.1007/978-3-319-15892-1_20).
- [1382] M. López-Ibáñez and T. Stützle. **An Analysis of Algorithmic Components for Multiobjective Ant Colony Optimization: A Case Study on the Biobjective TSP**. Technical Report TR/IRIDIA/2009-019, IRIDIA, Université Libre de Bruxelles, Belgium, June 2009. Published in the proceedings of Evolution Artificielle, 2009 [1383].
- [1383] M. López-Ibáñez and T. Stützle. **An Analysis of Algorithmic Components for Multiobjective Ant Colony Optimization: A Case Study on the Biobjective TSP**. In P. Collet, N. Monmarché, P. Legrand, M. Schoenauer, and E. Lutton, editors, *Artificial Evolution: 9th International Conference, Evolution Artificielle, EA, 2009*, volume 5975 of *Lecture Notes in Computer Science*, pages 134–145. Springer, Heidelberg, Germany, 2010. doi:[10.1007/978-3-642-14156-0\\_12](https://doi.org/10.1007/978-3-642-14156-0_12).
- [1384] M. López-Ibáñez and T. Stützle. **Automatic Configuration of Multi-Objective ACO Algorithms**. In M. Dorigo et al., editors, *Swarm Intelligence, 7th International Conference, ANTS 2010*, volume 6234 of *Lecture Notes in Computer Science*, pages 95–106. Springer, Heidelberg, Germany, 2010. doi:[10.1007/978-3-642-15461-4\\_9](https://doi.org/10.1007/978-3-642-15461-4_9).
- [1385] M. López-Ibáñez and T. Stützle. **The impact of design choices of multi-objective ant colony optimization algorithms on performance: An experimental study on the biobjective TSP**. In M. Pelikan and J. Branke, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2010*, pages 71–78. ACM Press, New York, NY, 2010. doi:[10.1145/1830483.1830494](https://doi.org/10.1145/1830483.1830494).
- [1386] M. López-Ibáñez and T. Stützle. **The impact of design choices of multi-objective ant colony optimization algorithms on performance: An experimental study on the biobjective TSP**. <http://iridia.ulb.ac.be/supp/IridiaSupp2010-003/>, 2010. Supplementary material of [1385].
- [1387] M. López-Ibáñez and T. Stützle. **The Automatic Design of Multi-Objective Ant Colony Optimization Algorithms**. Technical Report TR/IRIDIA/2011-003, IRIDIA, Université Libre de Bruxelles, Belgium, 2011. URL <http://iridia.ulb.ac.be/IridiaTrSeries/IridiaTr2011-003.pdf>. Published in IEEE Transactions on Evolutionary Computation [1393].

- [1388] M. López-Ibáñez and T. Stützle. **The Automatic Design of Multi-Objective Ant Colony Optimization Algorithms: Supplementary material**, 2011. URL <http://iridia.ulb.ac.be/supp/IridiaSupp2011-007/Iridia-2011-007.pdf>.
- [1389] M. López-Ibáñez and T. Stützle. **Automatically Improving the Anytime Behaviour of Optimisation Algorithms**. Technical Report TR/IRIDIA/2012-012, IRIDIA, Université Libre de Bruxelles, Belgium, May 2012. Published in European Journal of Operations Research [1394].
- [1390] M. López-Ibáñez and T. Stützle. **Automatically Improving the Anytime Behaviour of Optimisation Algorithms: Supplementary material**. <http://iridia.ulb.ac.be/supp/IridiaSupp2012-011/>, 2012.
- [1391] M. López-Ibáñez and T. Stützle. **An experimental analysis of design choices of multi-objective ant colony optimization algorithms: Supplementary material**. <http://iridia.ulb.ac.be/supp/IridiaSupp2012-006/>, 2012.
- [1392] M. López-Ibáñez and T. Stützle. **An experimental analysis of design choices of multi-objective ant colony optimization algorithms**. *Swarm Intelligence*, 6(3): 207–232, 2012. doi:10.1007/s11721-012-0070-7. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2012-006/>.
- [1393] M. López-Ibáñez and T. Stützle. **The Automatic Design of Multi-Objective Ant Colony Optimization Algorithms**. *IEEE Transactions on Evolutionary Computation*, 16(6):861–875, 2012. doi:10.1109/TEVC.2011.2182651.
- [1394] M. López-Ibáñez and T. Stützle. **Automatically Improving the Anytime Behaviour of Optimisation Algorithms**. *European Journal of Operational Research*, 235(3): 569–582, 2014. doi:10.1016/j.ejor.2013.10.043. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2012-011/>.
- [1395] M. López-Ibáñez, L. Paquete, and T. Stützle. **On the Design of ACO for the Biobjective Quadratic Assignment Problem**. In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 4th International Workshop, ANTS 2004*, volume 3172 of *Lecture Notes in Computer Science*, pages 214–225. Springer, Heidelberg, Germany, 2004. doi:10.1007/978-3-540-28646-2\_19.
- [1396] M. López-Ibáñez, L. Paquete, and T. Stützle. **Hybrid Population-based Algorithms for the Bi-objective Quadratic Assignment Problem**. Technical Report AIDA-04-11, FG Intellektik, FB Informatik, TU Darmstadt, Dec. 2004. Published in Journal of Mathematical Modelling and Algorithms [1399].
- [1397] M. López-Ibáñez, T. D. Prasad, and B. Paechter. **Multi-objective Optimisation of the Pump Scheduling Problem using SPEA2**. In *Proceedings of the 2005 Congress on Evolutionary Computation (CEC 2005)*, volume 1, pages 435–442. IEEE Press, Piscataway, NJ, Sept. 2005. doi:10.1109/CEC.2005.1554716.
- [1398] M. López-Ibáñez, T. D. Prasad, and B. Paechter. **Optimal Pump Scheduling: Representation and Multiple Objectives**. In D. A. Savic, G. A. Walters, R. King, and S. Thiam-Khu, editors, *Proceedings of the Eighth International Conference on Computing and Control for the Water Industry (CCWI 2005)*, volume 1, pages 117–122, University of Exeter, UK, Sept. 2005.



- [1399] M. López-Ibáñez, L. Paquete, and T. Stützle. **Hybrid Population-based Algorithms for the Bi-objective Quadratic Assignment Problem**. *Journal of Mathematical Modelling and Algorithms*, 5(1):111–137, 2006. doi:[10.1007/s10852-005-9034-x](https://doi.org/10.1007/s10852-005-9034-x).
- [1400] M. López-Ibáñez, T. D. Prasad, and B. Paechter. **Solving Optimal Pump Control Problem using  $\mathcal{MAX-MZN}$  Ant System**. In D. Thierens et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2007*, volume 1, page 176. ACM Press, New York, NY, 2007. doi:[10.1145/1276958.1276990](https://doi.org/10.1145/1276958.1276990).
- [1401] M. López-Ibáñez, T. D. Prasad, and B. Paechter. **Parallel Optimisation Of Pump Schedules With A Thread-Safe Variant Of EPANET Toolkit**. In J. E. van Zyl, A. A. Ilcmobade, and H. E. Jacobs, editors, *Proceedings of the 10th Annual Water Distribution Systems Analysis Conference (WDSA 2008)*. ASCE, Aug. 2008. doi:[10.1061/41024\(340\)40](https://doi.org/10.1061/41024(340)40).
- [1402] M. López-Ibáñez, T. D. Prasad, and B. Paechter. **Ant Colony Optimisation for the Optimal Control of Pumps in Water Distribution Networks**. *Journal of Water Resources Planning and Management, ASCE*, 134(4):337–346, 2008. doi:[10.1061/\(ASCE\)0733-9496\(2008\)134:4\(337\)](https://doi.org/10.1061/(ASCE)0733-9496(2008)134:4(337)).
- [1403] M. López-Ibáñez, C. Blum, D. Thiruvady, A. T. Ernst, and B. Meyer. **Beam-ACO based on stochastic sampling for makespan optimization concerning the TSP with time windows**. In C. Cotta and P. Cowling, editors, *Proceedings of EvoCOP 2009 – 9th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 5482 of *Lecture Notes in Computer Science*, pages 97–108. Springer, Heidelberg, Germany, 2009. doi:[10.1007/978-3-642-01009-5\\_9](https://doi.org/10.1007/978-3-642-01009-5_9).
- [1404] M. López-Ibáñez, L. Paquete, and T. Stützle. **Exploratory Analysis of Stochastic Local Search Algorithms in Biobjective Optimization**. Technical Report TR/IRIDIA/2009-015, IRIDIA, Université Libre de Bruxelles, Belgium, May 2009. Published as a book chapter [1405].
- [1405] M. López-Ibáñez, L. Paquete, and T. Stützle. **Exploratory Analysis of Stochastic Local Search Algorithms in Biobjective Optimization**. In T. Bartz-Beielstein, M. Chiarandini, L. Paquete, and M. Preuss, editors, *Experimental Methods for the Analysis of Optimization Algorithms*, pages 209–222. Springer, Berlin, Germany, 2010. doi:[10.1007/978-3-642-02538-9\\_9](https://doi.org/10.1007/978-3-642-02538-9_9).
- [1406] M. López-Ibáñez, L. Paquete, and T. Stützle. **EAF Graphical Tools**. <http://lopez-ibanez.eu/eaftools>, 2010. These tools are described in the book chapter “*Exploratory analysis of stochastic local search algorithms in biobjective optimization*” [1405].  
*Annotation:* Please cite the book chapter, not this.
- [1407] M. López-Ibáñez, J. Dubois-Lacoste, T. Stützle, and M. Birattari. **The irace package, Iterated Race for Automatic Algorithm Configuration**. Technical Report TR/IRIDIA/2011-004, IRIDIA, Université Libre de Bruxelles, Belgium, 2011. URL <http://iridia.ulb.ac.be/IridiaTrSeries/IridiaTr2011-004.pdf>. Published in *Operations Research Perspectives* [1417].
- [1408] M. López-Ibáñez, J. D. Knowles, and M. Laumanns. **On Sequential Online Archiving of Objective Vectors**. Technical Report TR/IRIDIA/2011-001, IRIDIA, Université



- Libre de Bruxelles, Belgium, 2011. URL <http://iridia.ulb.ac.be/IridiaTrSeries/IridiaTr2011-001.pdf>. This is a revised version of the paper published in EMO 2011 [1409].
- [1409] M. López-Ibáñez, J. D. Knowles, and M. Laumanns. **On Sequential Online Archiving of Objective Vectors**. In R. H. C. Takahashi et al., editors, *Evolutionary Multi-criterion Optimization, EMO 2011*, volume 6576 of *Lecture Notes in Computer Science*, pages 46–60. Springer, Heidelberg, Germany, 2011. doi:10.1007/978-3-642-19893-9\_4. Annotation: Revised version available at <http://iridia.ulb.ac.be/IridiaTrSeries/IridiaTr2011-001.pdf>.
- [1410] M. López-Ibáñez, T. D. Prasad, and B. Paechter. **Representations and Evolutionary Operators for the Scheduling of Pump Operations in Water Distribution Networks**. *Evolutionary Computation*, 19(3):429–467, 2011. doi:10.1162/EVC0\_a\_00035.
- [1411] M. López-Ibáñez, T. Liao, and T. Stützle. **On the anytime behavior of IPOP-CMA-ES**. In C. A. Coello Coello et al., editors, *Parallel Problem Solving from Nature, PPSN XII*, volume 7491 of *Lecture Notes in Computer Science*, pages 357–366. Springer, Heidelberg, Germany, 2012. doi:10.1007/978-3-642-32937-1\_36.
- [1412] M. López-Ibáñez, T. Liao, and T. Stützle. **On the anytime behavior of IPOP-CMA-ES: Supplementary material**. <http://iridia.ulb.ac.be/supp/IridiaSupp2012-010/>, 2012.
- [1413] M. López-Ibáñez, C. Blum, J. W. Ohlmann, and B. W. Thomas. **The Travelling Salesman Problem with Time Windows: Adapting Algorithms from Travel-time to Makespan Optimization**. *Applied Soft Computing*, 13(9):3806–3815, 2013. doi:10.1016/j.asoc.2013.05.009.
- [1414] M. López-Ibáñez, F. Mascia, M.-E. Marmion, and T. Stützle. **Automatic Design of a Hybrid Iterated Local Search for the Multi-Mode Resource-Constrained Multi-Project Scheduling Problem**. In G. Kendall, G. V. Berghe, and B. McCollum, editors, *Multidisciplinary International Conference on Scheduling: Theory and Applications (MISTA 2013)*, pages 1–6, Gent, Belgium, 2013. Annotation: <https://hal.inria.fr/hal-01094681>.
- [1415] M. López-Ibáñez, A. Liefoghe, and S. Verel. **Local Optimal Sets and Bounded Archiving on Multi-objective NK-Landscapes with Correlated Objectives**. Technical Report TR/IRIDIA/2014-009, IRIDIA, Université Libre de Bruxelles, Belgium, 2014.
- [1416] M. López-Ibáñez, A. Liefoghe, and S. Verel. **Local Optimal Sets and Bounded Archiving on Multi-objective NK-Landscapes with Correlated Objectives**. In T. Bartz-Beielstein, J. Branke, B. Filipič, and J. Smith, editors, *PPSN 2014*, volume 8672 of *Lecture Notes in Computer Science*, pages 621–630. Springer, Heidelberg, Germany, 2014. doi:10.1007/978-3-319-10762-2\_61.
- [1417] M. López-Ibáñez, J. Dubois-Lacoste, L. Pérez Cáceres, T. Stützle, and M. Birattari. **The irace package: Iterated Racing for Automatic Algorithm Configuration**. *Operations Research Perspectives*, 3:43–58, 2016. doi:10.1016/j.orp.2016.09.002. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2016-003/>.

- [1418] M. López-Ibáñez, J. Dubois-Lacoste, L. Pérez Cáceres, T. Stützle, and M. Birattari. **The irace Package: Iterated Racing for Automatic Algorithm Configuration**. <http://iridia.ulb.ac.be/supp/IridiaSupp2016-003/>, 2016.
- [1419] M. López-Ibáñez, L. Pérez Cáceres, J. Dubois-Lacoste, T. Stützle, and M. Birattari. **The irace package: User Guide**. Technical Report TR/IRIDIA/2016-004, IRIDIA, Université Libre de Bruxelles, Belgium, 2016. URL <http://iridia.ulb.ac.be/IridiaTrSeries/IridiaTr2016-004.pdf>.
- [1420] M. López-Ibáñez, M.-E. Kessaci, and T. Stützle. **Automatic Design of Hybrid Metaheuristics from Algorithmic Components**. Technical Report TR/IRIDIA/2017-012, IRIDIA, Université Libre de Bruxelles, Belgium, Dec. 2017. URL <http://iridia.ulb.ac.be/IridiaTrSeries/link/IridiaTr2017-012.pdf>.
- [1421] M. López-Ibáñez, M.-E. Kessaci, and T. Stützle. **Automatic Design of Hybrid Metaheuristics from Algorithmic Components**. *Submitted*, 2017.
- [1422] M. López-Ibáñez, T. Stützle, and M. Dorigo. **Ant Colony Optimization: A Component-Wise Overview**. In R. Martí, P. M. Pardalos, and M. G. C. Resende, editors, *Handbook of Heuristics*, pages 371–407. Springer International Publishing, 2018. ISBN 978-3-319-07125-1. doi:10.1007/978-3-319-07124-4\_21. Supplementary material: <http://iridia.ulb.ac.be/aco-tsp-qap/>.
- [1423] M. López-Ibáñez, A. Auger, and T. Stützle, editors. *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2019, Prague, Czech Republic, July 13-17, 2019*. ACM Press, New York, NY, 2019. ISBN 978-1-4503-6111-8.
- [1424] M. López-Ibáñez, A. Auger, and T. Stützle, editors. *Genetic and Evolutionary Computation Conference Companion, GECCO 2019, Prague, Czech Republic, July 13-17, 2019*. ACM Press, New York, NY, 2019.
- [1425] A. López Jaimes, C. A. Coello Coello, and D. Chakraborty. **Objective reduction using a feature selection technique**. In C. Ryan, editor, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2008*, pages 673–680. ACM Press, New York, NY, 2008.
- [1426] I. Loshchilov and T. Glasmachers. **Black Box Optimization Competition**, 2017. URL <https://bbcomp.ini.rub.de/>.
- [1427] I. Loshchilov, M. Schoenauer, and M. Sebag. **Alternative Restart Strategies for CMA-ES**. In C. A. Coello Coello et al., editors, *Parallel Problem Solving from Nature, PPSN XII*, volume 7491 of *Lecture Notes in Computer Science*, pages 296–305. Springer, Heidelberg, Germany, 2012. doi:10.1007/978-3-642-32937-1\_30.
- [1428] A. V. Lotov and K. Miettinen. **Visualizing the Pareto Frontier**. In J. Branke, K. Deb, K. Miettinen, and R. Słowiński, editors, *Multi-objective Optimization: Interactive and Evolutionary Approaches*, volume 5252 of *Lecture Notes in Computer Science*, pages 213–243. Springer, Heidelberg, Germany, 2008.
- [1429] S. Loudni and P. Boizumault. **Combining VNS with constraint programming for solving anytime optimization problems**. *European Journal of Operational Research*, 191:705–735, 2008. doi:10.1016/j.ejor.2006.12.062.

- [1430] H. R. Lourenço. **Job-Shop Scheduling: Computational Study of Local Search and Large-Step Optimization Methods**. *European Journal of Operational Research*, 83(2):347–364, 1995.
- [1431] H. R. Lourenço, O. Martin, and T. Stützle. **Iterated Local Search**. In F. Glover and G. Kochenberger, editors, *Handbook of Metaheuristics*, pages 321–353. Kluwer Academic Publishers, Norwell, MA, 2002. doi:10.1007/0-306-48056-5\_11.
- [1432] H. R. Lourenço, O. Martin, and T. Stützle. **Iterated Local Search: Framework and Applications**. In M. Gendreau and J.-Y. Potvin, editors, *Handbook of Metaheuristics*, volume 146 of *International Series in Operations Research & Management Science*, chapter 9, pages 363–397. Springer, New York, NY, 2 edition, 2010. doi:10.1007/978-1-4419-1665-5\_12.
- [1433] H. R. Lourenço, O. Martin, and T. Stützle. **Iterated Local Search: Framework and Applications**. In M. Gendreau and J.-Y. Potvin, editors, *Handbook of Metaheuristics*, volume 272 of *International Series in Operations Research & Management Science*, chapter 5, pages 129–168. Springer, 2019. doi:10.1007/978-3-319-91086-4\_5.
- [1434] A. Lova and P. Tormos. **Analysis of Scheduling Schemes and Heuristic Rules Performance in Resource-Constrained Multiproject Scheduling**. *Annals of Operations Research*, 102(1-4):263–286, Feb. 2001. doi:10.1023/A:1010966401888.  
Keywords: Combinatorics, heuristic based on priority rules, Multiproject scheduling, Operation Research/Decision Theory, Project management, project management software, Resource allocation, Theory of Computation.
- [1435] A. Lova, P. Tormos, M. Cervantes, and F. Barber. **An efficient hybrid genetic algorithm for scheduling projects with resource constraints and multiple execution modes**. *International Journal of Production Economics*, 117(2):302–316, 2009. doi:10.1016/j.ijpe.2008.11.002.  
Keywords: genetic algorithm, multi-mode resource-constrained project scheduling.
- [1436] M. Lozano, D. Molina, and C. García-Martínez. **Iterated Greedy for the Maximum Diversity Problem**. *European Journal of Operational Research*, 214(1):31–38, 2011.
- [1437] M. Lozano, F. Glover, C. García-Martínez, F. J. Rodríguez, and R. Martí. **Tabu Search with Strategic Oscillation for the Quadratic Minimum Spanning Tree**. *IIE Transactions*, 46(4):414–428, 2014.
- [1438] Z. Lü, F. Glover, and J.-K. Hao. **A hybrid metaheuristic approach to solving the UBQP problem**. *European Journal of Operational Research*, 207(3):1254–1262, 2010. doi:10.1016/j.ejor.2010.06.039.
- [1439] M. Lundy and A. Mees. **Convergence of an Annealing Algorithm**. *Mathematical Programming*, 34(1):111–124, 1986.
- [1440] T. Lust and A. Jaszkiwicz. **Speed-up techniques for solving large-scale biobjective TSP**. *Computers & Operations Research*, 37(3):521–533, 2010. doi:10.1016/j.cor.2009.01.005.  
Keywords: Multiobjective combinatorial optimization, Hybrid metaheuristics, TSP, Local search, Speed-up techniques.

- [1441] T. Lust and J. Teghem. **Two-phase Pareto local search for the biobjective traveling salesman problem.** *Journal of Heuristics*, 16(3):475–510, 2010. doi:[10.1007/s10732-009-9103-9](https://doi.org/10.1007/s10732-009-9103-9).
- [1442] T. Lust and J. Teghem. **The multiobjective traveling salesman problem: A survey and a new approach.** In C. A. Coello Coello, C. Dhaenens, and L. Jourdan, editors, *Advances in Multi-Objective Nature Inspired Computing*, volume 272 of *Studies in Computational Intelligence*, pages 119–141. Springer, 2010.
- [1443] T. Lust and J. Teghem. **The multiobjective multidimensional knapsack problem: a survey and a new approach.** *Arxiv preprint arXiv:1007.4063*, 2010.  
Annotation: Published as [1444].
- [1444] T. Lust and J. Teghem. **The multiobjective multidimensional knapsack problem: a survey and a new approach.** *International Transactions in Operational Research*, 19(4):495–520, 2012. doi:[10.1111/j.1475-3995.2011.00840.x](https://doi.org/10.1111/j.1475-3995.2011.00840.x).
- [1445] E. Lutton, P. Legrand, P. Parrend, N. Monmarché, and M. Schoenauer, editors. *Artificial Evolution: 13th International Conference, Évolution Artificielle, EA 2017, Paris, France, October 25–27, 2017, Revised Selected*, volume 10764 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2017.
- [1446] E. López-Camacho, H. Terashima-Marin, P. Ross, and G. Ochoa. **A unified hyper-heuristic framework for solving bin packing problems.** *Expert Systems with Applications*, 41(15):6876 – 6889, 2014. doi:[10.1016/j.eswa.2014.04.043](https://doi.org/10.1016/j.eswa.2014.04.043).
- [1447] G. Mäckle, D. A. Savic, and G. A. Walters. **Application of Genetic Algorithms to Pump Scheduling for Water Supply.** In *Genetic Algorithms in Engineering Systems: Innovations and Applications, GALEZIA '95*, volume 414, pages 400–405, Sheffield, UK, Sept. 1995. IEE Conference Publication.
- [1448] N. K. Madavan. **Multiobjective optimization using a Pareto differential evolution approach.** In D. B. Fogel et al., editors, *Proceedings of the 2002 World Congress on Computational Intelligence (WCCI 2002)*, pages 1145–1150, Piscataway, NJ, 2002. IEEE Press.
- [1449] S. Madden. **From Databases to Big Data.** *IEEE Internet Computing*, 16(3), 2012.
- [1450] M. Mahdavi, M. Fesanghary, and E. Damangir. **An improved harmony search algorithm for solving optimization problems.** *Applied Mathematics and Computation*, 188(2):1567–1579, 2007. doi:[10.1016/j.amc.2006.11.033](https://doi.org/10.1016/j.amc.2006.11.033).  
Keywords: Global optimization, Heuristics, Harmony search algorithm, Mathematical programming.
- [1451] M. Maher and J.-F. Puget, editors. *Principles and Practice of Constraint Programming, CP98*, volume 1520 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 1998.
- [1452] H. R. Maier, A. R. Simpson, A. C. Zecchin, W. K. Foong, K. Y. Phang, H. Y. Seah, and C. L. Tan. **Ant Colony Optimization for Design of Water Distribution Systems.** *Journal of Water Resources Planning and Management, ASCE*, 129(3):200–209, May / June 2003.
- [1453] G. B. Mainieri and D. P. Ronconi. **New heuristics for total tardiness minimization in a flexible flowshop.** *Optimization Letters*, pages 1–20, 2012.

- [1454] C. Maksimović, D. Butler, and F. A. Memon, editors. *Advances in Water Supply Management: Proceedings of the CCWI '03 Conference, London, 15-17 September 2003*. CRC Press, 2003.
- [1455] R. M. Males, R. M. Clark, P. J. Wehrman, and W. E. Gateset. **Algorithm for mixing problems in water systems**. *Journal of Hydraulic Engineering, ASCE*, 111(2):206–219, 1985.
- [1456] Y. Malitsky and M. Sellmann. **Instance-specific algorithm configuration as a method for non-model-based portfolio generation**. In N. Beldiceanu, N. Jussien, and E. Pinson, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems*, volume 7298 of *Lecture Notes in Computer Science*, pages 244–259. Springer, Heidelberg, Germany, 2012. ISBN 978-3-642-29827-1.
- [1457] V. Maniezzo. **Exact and Approximate Nondeterministic Tree-Search Procedures for the Quadratic Assignment Problem**. *INFORMS Journal on Computing*, 11(4):358–369, 1999.
- [1458] V. Maniezzo and A. Carbonaro. **An ANTS Heuristic for the Frequency Assignment Problem**. *Future Generation Computer Systems*, 16(8):927–935, 2000.
- [1459] V. Maniezzo and A. Colorni. **The Ant System Applied to the Quadratic Assignment Problem**. *IEEE Transactions on Knowledge and Data Engineering*, 11(5):769–778, 1999.
- [1460] V. Maniezzo and M. Milandri. **An Ant-Based Framework for Very Strongly Constrained Problems**. In M. Dorigo et al., editors, *Ant Algorithms, Third International Workshop, ANTS 2002*, volume 2463 of *Lecture Notes in Computer Science*, pages 222–227. Springer, Heidelberg, Germany, 2002.
- [1461] V. Maniezzo, M. Boschetti, and M. Jelasity. **An Ant Approach to Membership Overlay Design**. In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 4th International Workshop, ANTS 2004*, volume 3172 of *Lecture Notes in Computer Science*, pages 37–48. Springer, Heidelberg, Germany, 2004.
- [1462] V. Maniezzo, R. Battiti, and J.-P. Watson, editors. *Learning and Intelligent Optimization, Second International Conference, LION 2007, Trento, Italy, December 8-12, 2007. Selected Papers*, volume 5313 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2008.
- [1463] V. Maniezzo, T. Stützle, and S. Voß, editors. *Matheuristics—Hybridizing Metaheuristics and Mathematical Programming*, volume 10 of *Annals of Information Systems*. Springer, New York, NY, 2009.
- [1464] R. Männer and B. Manderick, editors. *Parallel Problem Solving from Nature 2, PPSN-II, Brussels, Belgium, September 28-30, 1992*. Elsevier, 1992.
- [1465] C. D. Manning, M. Surdeanu, J. Bauer, J. R. Finkel, S. Bethard, and D. McClosky. **The stanford corenlp natural language processing toolkit**. In *ACL (System Demonstrations)*, pages 55–60, 2014.
- [1466] E. Marchiori and A. G. Steenbeek. **An Iterated Heuristic Algorithm for the Set Covering Problem**. In K. Mehlhorn, editor, *Algorithm Engineering, 2nd International Workshop, WAE'92*, pages 155–166. Max-Planck-Institut für Informatik, Saarbrücken, Germany, 1998.



- [1467] E. Marchiori and A. G. Steenbeek. **An Evolutionary Algorithm for Large Scale Set Covering Problems with Application to Airline Crew Scheduling.** In S. Cagnoni et al., editors, *Real-World Applications of Evolutionary Computing, EvoWorkshops 2000*, volume 1803 of *Lecture Notes in Computer Science*, pages 367–381. Springer, Heidelberg, Germany, 2000.
- [1468] C. E. Mariano and E. Morales. **MOAQ: An Ant-Q Algorithm for Multiple Objective Optimization Problems.** In W. Banzhaf, J. M. Daida, A. E. Eiben, M. H. Garzon, V. Honavar, M. J. Jakiela, and R. E. Smith, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 1999*, pages 894–901. Morgan Kaufmann Publishers, San Francisco, CA, 1999.
- [1469] R. T. Marler and J. S. Arora. **Survey of multi-objective optimization methods for engineering.** *Structural and Multidisciplinary Optimization*, 26(6):369–395, Apr. 2004. doi:10.1007/s00158-003-0368-6.
- [1470] M.-E. Marmion, C. Dhaenens, L. Jourdan, A. Liefvooghe, and S. Verel. **NILS: A Neutrality-Based Iterated Local Search and Its Application to Flowshop Scheduling.** In P. Merz and J.-K. Hao, editors, *Proceedings of EvoCOP 2011 – 11th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 6622 of *Lecture Notes in Computer Science*, pages 191–202. Springer, Heidelberg, Germany, 2011.
- [1471] M.-E. Marmion, F. Mascia, M. López-Ibáñez, and T. Stützle. **Automatic Design of Hybrid Stochastic Local Search Algorithms.** In M. J. Blesa, C. Blum, P. Festa, A. Roli, and M. Sampels, editors, *Hybrid Metaheuristics*, volume 7919 of *Lecture Notes in Computer Science*, pages 144–158. Springer, Heidelberg, Germany, 2013. ISBN 978-3-642-38515-5. doi:10.1007/978-3-642-38516-2\_12.
- [1472] O. Maron. **Hoeffding Races: Model selection for MRI classification.** Master’s thesis, Massachusetts Institute of Technology, 1994.
- [1473] O. Maron and A. W. Moore. **Hoeffding races: Accelerating model selection search for classification and function approximation.** In J. D. Cowan, G. Tesauro, and J. Alsppector, editors, *Advances in Neural Information Processing Systems*, volume 6, pages 59–66. Morgan Kaufmann Publishers, San Francisco, CA, 1994.
- [1474] O. Maron and A. W. Moore. **The Racing Algorithm: Model Selection for Lazy Learners.** *Artificial Intelligence Research*, 11(1–5):193–225, 1997.
- [1475] K. Marriott and P. Stuckey. *Programming With Constraints*. MIT Press, Cambridge, MA, 1998.
- [1476] S. Martello and P. Toth. **Lower bounds and reduction procedures for the bin packing problem.** *Discrete Applied Mathematics*, 28(1):59–70, 1990. doi:10.1016/0166-218X(90)90094-S.
- [1477] S. Martello and P. Toth. *Knapsack Problems: Algorithms and Computer Implementations*. John Wiley & Sons, Chichester, UK, 1990.  
*Keywords:* bin packing.
- [1478] D. Martens, M. D. Backer, R. Haesen, J. Vanthienen, M. Snoeck, and B. Baesens. **Classification With Ant Colony Optimization.** *IEEE Transactions on Evolutionary Computation*, 11(5):651–665, 2007.



- [1479] R. Martí, G. Reinelt, and A. Duarte. **A Benchmark Library and a Comparison of Heuristic Methods for the Linear Ordering Problem.** *Computational Optimization and Applications*, 51(3):1297–1317, 2012.
- [1480] R. Martí, P. M. Pardalos, and M. G. C. Resende, editors. *Handbook of Heuristics*. Springer International Publishing, 2018. ISBN 978-3-319-07125-1.
- [1481] O. Martin and S. W. Otto. **Partitioning of Unstructured Meshes for Load Balancing.** *Concurrency: Practice and Experience*, 7(4):303–314, 1995.
- [1482] O. Martin and S. W. Otto. **Combining Simulated Annealing with Local Search Heuristics.** *Annals of Operations Research*, 63:57–75, 1996.
- [1483] O. Martin, S. W. Otto, and E. W. Felten. **Large-Step Markov Chains for the Traveling Salesman Problem.** *Complex Systems*, 5(3):299–326, 1991.
- [1484] O. Martin, S. W. Otto, and E. W. Felten. **Large-step Markov Chains for the TSP Incorporating Local Search Heuristics.** *Operations Research Letters*, 11(4):219–224, 1992.
- [1485] C. Martín-Vide, R. Neruda, and M. A. Vega-Rodríguez, editors. *Theory and Practice of Natural Computing - 6th International Conference, TPNC 2017*, volume 10687 of *Lecture Notes in Computer Science*. Springer International Publishing, Cham, Switzerland, 2017.
- [1486] F. Martínez, V. Bou, V. Hernández, F. Alvarruiz, and J. M. Alonso. **ANN Architectures for Simulating Water Distribution Networks.** In D. A. Savic, G. A. Walters, R. King, and S. Thiam-Khu, editors, *Proceedings of the Eighth International Conference on Computing and Control for the Water Industry (CCWI 2005)*, volume 1, pages 251–256, University of Exeter, UK, Sept. 2005.
- [1487] E. Q. V. Martins. **On a multicriteria shortest path problem.** *European Journal of Operational Research*, 16:236–245, 1984.
- [1488] F. Mascia, M. Birattari, and T. Stützle. **Tuning Algorithms for Tackling Large Instances: An Experimental Protocol.** In P. M. Pardalos and G. Nicosia, editors, *Learning and Intelligent Optimization, 7th International Conference, LION 7*, volume 7997 of *Lecture Notes in Computer Science*, pages 410–422. Springer, Heidelberg, Germany, 2013. doi:10.1007/978-3-642-44973-4\_44.
- [1489] F. Mascia, M. López-Ibáñez, J. Dubois-Lacoste, and T. Stützle. **Grammar-based generation of stochastic local search heuristics through automatic algorithm configuration tools.** Technical Report TR/IRIDIA/2013-015, IRIDIA, Université Libre de Bruxelles, Belgium, 2013.
- [1490] F. Mascia, M. López-Ibáñez, J. Dubois-Lacoste, and T. Stützle. **Grammar-based generation of stochastic local search heuristics through automatic algorithm configuration tools: Supplementary material.** <http://iridia.ulb.ac.be/supp/IridiaSupp2013-009/>, 2013.
- [1491] F. Mascia, M. López-Ibáñez, J. Dubois-Lacoste, and T. Stützle. **From Grammars to Parameters: Automatic Iterated Greedy Design for the Permutation Flow-shop Problem with Weighted Tardiness.** In P. M. Pardalos and G. Nicosia, editors, *Learning and Intelligent Optimization, 7th International Conference, LION 7*, volume 7997 of *Lecture Notes in Computer Science*, pages 321–334. Springer, Heidelberg, Germany, 2013. doi:10.1007/978-3-642-44973-4\_36.

- [1492] F. Mascia, M. López-Ibáñez, J. Dubois-Lacoste, M.-E. Marmion, and T. Stützle. **Algorithm Comparison by Automatically Configurable Stochastic Local Search Frameworks: A Case Study Using Flow-Shop Scheduling Problems.** In M. J. Blesa, C. Blum, and S. Voß, editors, *Hybrid Metaheuristics*, volume 8457 of *Lecture Notes in Computer Science*, pages 30–44. Springer, Heidelberg, Germany, 2014. ISBN 978-3-319-07643-0. doi:10.1007/978-3-319-07644-7\_3.
- [1493] F. Mascia, M. López-Ibáñez, J. Dubois-Lacoste, and T. Stützle. **Grammar-based generation of stochastic local search heuristics through automatic algorithm configuration tools.** *Computers & Operations Research*, 51:190–199, 2014. doi:10.1016/j.cor.2014.05.020.
- [1494] F. Mascia, P. Pellegrini, T. Stützle, and M. Birattari. **An Analysis of Parameter Adaptation in Reactive Tabu Search.** *International Transactions in Operational Research*, 21(1):127–152, 2014.
- [1495] F. Massen, Y. Deville, and P. van Hentenryck. **Pheromone-Based Heuristic Column Generation for Vehicle Routing Problems with Black Box Feasibility.** In N. Beldiceanu, N. Jussien, and E. Pinson, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems*, volume 7298 of *Lecture Notes in Computer Science*, pages 260–274. Springer, Heidelberg, Germany, 2012. ISBN 978-3-642-29827-1. doi:10.1007/978-3-642-29828-8\_17.
- [1496] F. Massen, M. López-Ibáñez, T. Stützle, and Y. Deville. **Experimental Analysis of Pheromone-Based Heuristic Column Generation Using irace.** In M. J. Blesa, C. Blum, P. Festa, A. Roli, and M. Sampels, editors, *Hybrid Metaheuristics*, volume 7919 of *Lecture Notes in Computer Science*, pages 92–106. Springer, Heidelberg, Germany, 2013. ISBN 978-3-642-38515-5. doi:10.1007/978-3-642-38516-2\_8.
- [1497] R. Masson, T. Vidal, J. Michallet, P. H. Vaz Penna, V. Petrucci, A. Subramanian, and H. Dubedout. **An Iterated Local Search Heuristic for Multi-capacity Bin Packing and Machine Reassignment Problems.** *Expert Systems with Applications*, 40(13):5266–5275, 2013.
- [1498] Y. Mati, S. Dauzère-Pèrès, and C. Lahlou. **A General Approach for Optimizing Regular Criteria in the Job-shop Scheduling Problem.** *European Journal of Operational Research*, 212(1):33–42, 2011.
- [1499] M. Maur, M. López-Ibáñez, and T. Stützle. **Pre-scheduled and adaptive parameter variation in MAX–MIN Ant System.** In H. Ishibuchi et al., editors, *Proceedings of the 2010 Congress on Evolutionary Computation (CEC 2010)*, pages 3823–3830. IEEE Press, Piscataway, NJ, 2010. doi:10.1109/CEC.2010.5586332.
- [1500] A. Mazumdar, T. Chugh, K. Miettinen, and M. López-Ibáñez. **On Dealing with Uncertainties from Kriging Models in Offline Data-Driven Evolutionary Multiobjective Optimization.** In K. Deb, E. D. Goodman, C. A. Coello Coello, K. Klamroth, K. Miettinen, S. Mostaghim, and P. Reed, editors, *Evolutionary Multi-criterion Optimization, EMO 2019*, volume 11411 of *Lecture Notes in Computer Science*, pages 463–474. Springer International Publishing, Cham, Switzerland, 2019. ISBN 978-3-030-12597-4. doi:10.1007/978-3-030-12598-1\_37.

- [1501] G. McCormick and R. S. Powell. **Optimal Pump Scheduling in Water Supply Systems with Maximum Demand Charges.** *Journal of Water Resources Planning and Management, ASCE*, 129(5):372–379, 2003. doi:[10.1061/\(ASCE\)0733-9496\(2003\)129:5\(372\)](https://doi.org/10.1061/(ASCE)0733-9496(2003)129:5(372)).  
*Keywords:* water supply; pumps; Markov processes; cost optimal control.
- [1502] G. McCormick and R. S. Powell. **A progressive mixed integer-programming method for pump scheduling.** In C. Maksimović, D. Butler, and F. A. Memon, editors, *Advances in Water Supply Management*, pages 307–313. CRC Press, 2003.
- [1503] G. McCormick and R. S. Powell. **Optimal Pump Scheduling in Water Supply Systems with Maximum Demand Charges.** *Journal of Water Resources Planning and Management, ASCE*, 129(5):372–379, Sept. / Oct. 2003.
- [1504] G. McCormick and R. S. Powell. **Derivation of near-optimal pump schedules for water distribution by simulated annealing.** *Journal of the Operational Research Society*, 55(7):728–736, July 2004. doi:[10.1057/palgrave.jors.2601718](https://doi.org/10.1057/palgrave.jors.2601718).
- [1505] J. McDermott. **When and Why Metaheuristics Researchers can Ignore "No Free Lunch" Theorems.** *SN Computer Science*, 1(60):1–18, 2020. doi:[10.1007/s42979-020-0063-3](https://doi.org/10.1007/s42979-020-0063-3).
- [1506] J. McDermott, M. Castelli, L. Sekanina, E. Haasdijk, and P. García-Sánchez, editors. *Genetic Programming - 20th European Conference, EuroGP 2017, Amsterdam, The Netherlands, April 19-21, 2017, Proceedings*, volume 10196 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2017. ISBN 978-3-319-55695-6. doi:[10.1007/978-3-319-55696-3](https://doi.org/10.1007/978-3-319-55696-3).
- [1507] C. C. McGeoch. **Analyzing Algorithms by Simulation: Variance Reduction Techniques and Simulation Speedups.** *ACM Computing Surveys*, 24(2):195–212, 1992. doi:[10.1145/130844.130853](https://doi.org/10.1145/130844.130853).  
*Keywords:* experimental analysis of algorithms, move-to-front rule, self-organizing sequential search, statistical analysis of algorithms, transpose rule, variance reduction techniques.
- [1508] C. C. McGeoch. **Toward an Experimental Method for Algorithm Simulation.** *INFORMS Journal on Computing*, 8(1):1–15, 1996. doi:[10.1287/ijoc.8.1.1](https://doi.org/10.1287/ijoc.8.1.1).
- [1509] S. A. McIlraith and K. Q. Weinberger, editors. *Proceedings of the Thirty-Second AAAI Conference on Artificial Intelligence, February 2-7, 2018, New Orleans, Louisiana, USA*. AAAI Press, Feb. 2018.
- [1510] M. D. McKay, R. J. Beckman, and W. J. Conover. **A Comparison of Three Methods for Selecting Values of Input Variables in the Analysis of Output from a Computer Code.** *Technometrics*, 21(2):239–245, 1979.
- [1511] R. I. McKay, N. X. Hoai, P. A. Whigham, Y. Shan, and M. O'Neill. **Grammar-based Genetic Programming: A Survey.** *Genetic Programming and Evolvable Machines*, 11(3-4):365–396, Sept. 2010. doi:[10.1007/s10710-010-9109-y](https://doi.org/10.1007/s10710-010-9109-y).
- [1512] R. McKenna, V. Bertsch, K. Mainzer, and W. Fichtner. **Combining local preferences with multi-criteria decision analysis and linear optimization to develop feasible energy concepts in small communities.** *European Journal of Operational Research*, 268(3):1092–1110, 2018.

- [1513] K. Mehlhorn, editor. *Algorithm Engineering, 2nd International Workshop, WAE'92*, 1998. Max-Planck-Institut für Informatik, Saarbrücken, Germany.
- [1514] J. Mehnen, M. Köppen, A. Saad, and A. Tiwari, editors. *Applications of Soft Computing*, volume 58 of *Advances in Intelligent and Soft Computing*. Springer, Berlin/Heidelberg, 2009.
- [1515] J. F. Meier and U. Clausen. **A versatile heuristic approach for generalized hub location problems**. Preprint, Provided upon personal request, 2014.
- [1516] C. S. Mellish, editor. *IJCAI 1995, Proceedings of the 14th International Joint Conference on Artificial Intelligence, IJCAI 95, Montréal Québec, Canada, August 20-25, 1995, 2 Volumes*. Morgan Kaufmann Publishers, 1995.
- [1517] L. Melo, F. Pereira, and E. Costa. **MC-ANT: a Multi-colony Ant Algorithm**. In P. Collet, N. Monmarché, P. Legrand, M. Schoenauer, and E. Lutton, editors, *Artificial Evolution: 9th International Conference, Evolution Artificielle, EA, 2009*, volume 5975 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2010.
- [1518] M. Melo Silva, A. Subramanian, and L. S. Ochi. **An Iterated Local Search Heuristic for the Split Delivery Vehicle Routing Problem**. *Computers & Operations Research*, 53:234–249, 2015.
- [1519] G. Melvin, T. J. Dodd, and R. Groß. **Why ‘GSA: a gravitational search algorithm’ is not genuinely based on the law of gravity**. *Natural Computing*, 11(4):719–720, 2012.
- [1520] A. Menchaca-Mendez and C. A. Coello Coello. **GD-MOEA: A New Multi-Objective Evolutionary Algorithm Based on the Generational Distance Indicator**. In A. Gaspar-Cunha, C. H. Antunes, and C. A. Coello Coello, editors, *Evolutionary Multi-criterion Optimization, EMO 2015 Part I*, volume 9018 of *Lecture Notes in Computer Science*, pages 156–170. Springer, Heidelberg, Germany, 2015.
- [1521] A. Menchaca-Mendez and C. A. Coello Coello. **GDE-MOEA: A New MOEA based on the generational distance indicator and  $\epsilon$ -dominance**. In *Proceedings of the 2015 Congress on Evolutionary Computation (CEC 2015)*, pages 947–955, Piscataway, NJ, 2015. IEEE Press.
- [1522] H. Mendoza, A. Klein, M. Feurer, J. T. Springenberg, and F. Hutter. **Towards automatically-tuned neural networks**. In *Workshop on Automatic Machine Learning*, pages 58–65, 2016.
- [1523] O. J. Mengshoel. **Understanding the role of noise in stochastic local search: Analysis and experiments**. *Artificial Intelligence*, 172(8):955–990, 2008.
- [1524] J.-J. Merelo and C. Cotta. **Building bridges: the role of subfields in metaheuristics**. *SIGEVolution*, 1(4):9–15, 2006. doi:10.1145/1229735.1229737.
- [1525] J. J. Merelo et al., editors. *Proceedings of PPSN-VII, Seventh International Conference on Parallel Problem Solving from Nature*, volume 2439 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2002.

- [1526] D. Merkle and M. Middendorf. **Prospects for Dynamic Algorithm Control: Lessons from the Phase Structure of Ant Scheduling Algorithms**. In R. B. Heckendorn, editor, *Proceedings of the 2001 Genetic and Evolutionary Computation Conference – Workshop Program. Workshop “The Next Ten Years of Scheduling Research”*, pages 121–126. Morgan Kaufmann Publishers, San Francisco, CA, 2001.
- [1527] D. Merkle and M. Middendorf. **Modeling the Dynamics of Ant Colony Optimization**. *Evolutionary Computation*, 10(3):235–262, 2002.
- [1528] D. Merkle and M. Middendorf. **Ant Colony Optimization with Global Pheromone Evaluation for Scheduling a Single Machine**. *Applied Intelligence*, 18(1):105–111, 2003.
- [1529] D. Merkle, M. Middendorf, and H. Schneck. **Ant Colony Optimization for Resource-Constrained Project Scheduling**. In D. Whitley et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2000*, pages 893–900. Morgan Kaufmann Publishers, San Francisco, CA, 2000.
- [1530] D. Merkle, M. Middendorf, and H. Schneck. **Ant Colony Optimization for Resource-Constrained Project Scheduling**. *IEEE Transactions on Evolutionary Computation*, 6(4):333–346, 2002.
- [1531] O. Mersmann. *mco: Multiple Criteria Optimization Algorithms and Related Functions*, 2014. URL <http://CRAN.R-project.org/package=mco>. R package version 1.0-15.1.
- [1532] O. Mersmann, H. Trautmann, B. Naujoks, and C. Weihs. **Benchmarking Evolutionary Multiobjective Optimization Algorithms**. In H. Ishibuchi et al., editors, *Proceedings of the 2010 Congress on Evolutionary Computation (CEC 2010)*, pages 1–8, Piscataway, NJ, 2010. IEEE Press.  
Annotation: TR: <http://hdl.handle.net/2003/26671>.
- [1533] O. Mersmann, B. Bischl, H. Trautmann, M. Preuss, C. Weihs, and G. Rudolph. **Exploratory Landscape Analysis**. In N. Krasnogor and P. L. Lanzi, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2011*, pages 829–836. ACM Press, New York, NY, 2011.  
Keywords: continuous optimization, landscape analysis, instance features.
- [1534] P. Merz and B. Freisleben. **Fitness Landscape Analysis and Memetic Algorithms for the Quadratic Assignment Problem**. *IEEE Transactions on Evolutionary Computation*, 4(4):337–352, 2000.
- [1535] P. Merz and B. Freisleben. **Memetic Algorithms for the Traveling Salesman Problem**. *Complex Systems*, 13(4):297–345, 2001.
- [1536] P. Merz and B. Freisleben. **Greedy and Local Search Heuristics for Unconstrained Binary Quadratic Programming**. *Journal of Heuristics*, 8(2):197–213, 2002. doi:10.1023/A:1017912624016.
- [1537] P. Merz and J.-K. Hao, editors. *Proceedings of EvoCOP 2011 – 11th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 6622 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2011.



- [1538] P. Merz and J. Huhse. **An Iterated Local Search Approach for Finding Provably Good Solutions for Very Large TSP Instances.** In G. Rudolph et al., editors, *Parallel Problem Solving from Nature, PPSN X*, volume 5199 of *Lecture Notes in Computer Science*, pages 929–939. Springer, Heidelberg, Germany, 2008.
- [1539] P. Merz and K. Katayama. **Memetic algorithms for the unconstrained binary quadratic programming problem.** *Biosystems*, 78(1):99–118, 2004. doi:10.1016/j.biosystems.2004.08.002.
- [1540] R. G. Mesquita, R. M. A. Silva, C. A. B. Mello, and P. B. C. Miranda. **Parameter tuning for document image binarization using a racing algorithm.** *Expert Systems with Applications*, 42(5):2593–2603, 2015. doi:10.1016/j.eswa.2014.10.039.  
*Keywords:* irace.
- [1541] N. Metropolis, A. W. Rosenbluth, M. N. Rosenbluth, A. Teller, and E. Teller. **Equation of State Calculations by Fast Computing Machines.** *Journal of Chemical Physics*, 21:1087–1092, 1953.
- [1542] N. Meuleau and M. Dorigo. **Ant Colony Optimization and Stochastic Gradient Descent.** *Artificial Life*, 8(2):103–121, 2002.
- [1543] B. Meyer. **Convergence control in ACO.** In *Genetic and Evolutionary Computation Conference (GECCO)*, Seattle, WA, 2004. Late-breaking paper available on CD.
- [1544] B. Meyer and A. T. Ernst. **Integrating ACO and Constraint Propagation.** In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 4th International Workshop, ANTS 2004*, volume 3172 of *Lecture Notes in Computer Science*, pages 166–177. Springer, Heidelberg, Germany, 2004.
- [1545] E. Mezura-Montes, J. Velázquez-Reyes, and C. A. Coello Coello. **A comparative study of differential evolution variants for global optimization.** In M. Cattolico et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2006*, pages 485–492. ACM Press, New York, NY, 2006. doi:10.1145/1143997.1144086.
- [1546] E. Mezura-Montes, M. Reyes-Sierra, and C. A. Coello Coello. **Multi-objective optimization using differential evolution: a survey of the state-of-the-art.** In U. K. Chakraborty, editor, *Advances in differential evolution*, pages 173–196. Springer, Heidelberg, Germany, 2008. doi:10.1007/978-3-540-68830-3\_7.
- [1547] R. M’Hallah. **An iterated local search variable neighborhood descent hybrid heuristic for the total earliness tardiness permutation flow shop.** *International Journal of Production Research*, 52(13):3802–3819, 2014.
- [1548] MIC. *Proceedings of MIC 2013, the 10th Metaheuristics International Conference*, 2013.
- [1549] Z. Michalewicz. *Genetic Algorithms + Data Structures = Evolution Programs*, 3rd Edition. Springer, Berlin, Germany, 1996.
- [1550] Z. Michalewicz and D. B. Fogel. *How to Solve It: Modern Heuristics*. Springer, second edition, 2004.
- [1551] Z. Michalewicz, D. Dasgupta, R. G. L. Riche, and M. Schoenauer. **Evolutionary algorithms for constrained engineering problems.** *Computers and Industrial Engineering*, 30(4):851–870, 1996. doi:10.1016/0360-8352(96)00037-X.



- [1552] J. Michallet, C. Prins, F. Yalaoui, and G. Vitry. **Multi-start Iterated Local Search for the Periodic Vehicle Routing Problem with Time Windows and Time Spread Constraints on Services.** *Computers & Operations Research*, 41:196–207, 2014.
- [1553] L. D. Michel and P. van Hentenryck. **Iterative Relaxations for Iterative Flattening in Cumulative Scheduling.** In S. Zilberstein, J. Koehler, and S. Koenig, editors, *Proceedings of the Fourteenth International Conference on Automated Planning and Scheduling (ICAPS 2004)*, pages 200–208. AAAI Press/MIT Press, Menlo Park, CA, 2004.
- [1554] R. Michel and M. Middendorf. **An Island Model based Ant System with Lookahead for the Shortest Supersequence Problem.** In A. E. Eiben, T. Bäck, M. Schoenauer, and H.-P. Schwefel, editors, *Parallel Problem Solving from Nature, PPSN V*, volume 1498 of *Lecture Notes in Computer Science*, pages 692–701. Springer, Heidelberg, Germany, 1998.
- [1555] M. Middendorf and C. Blum, editors. *Evolutionary Computation in Combinatorial Optimization – 13th European Conference, EvoCOP 2013, Vienna, Austria, April 3-5, 2013, Proceedings*, volume 7832 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2013.
- [1556] K. Miettinen. *Nonlinear Multiobjective Optimization*. Kluwer Academic Publishers, 1999.
- [1557] K. Miettinen. **Survey of methods to visualize alternatives in multiple criteria decision making problems.** *OR Spectrum*, 36(1):3–37, 2014.
- [1558] K. Miettinen, F. Ruiz, and A. Wierzbicki. **Introduction to Multiobjective Optimization: Interactive Approaches.** In J. Branke, K. Deb, K. Miettinen, and R. Słowiński, editors, *Multi-objective Optimization: Interactive and Evolutionary Approaches*, volume 5252 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2008. doi:10.1007/978-3-540-88908-3\_2.
- [1559] R. B. Millar and M. J. Anderson. **Remedies for pseudoreplication.** *Fisheries Research*, 70(2–3):397–407, 2004. doi:10.1016/j.fishres.2004.08.016.
- [1560] G. A. Miller. **The magical number seven, plus or minus two: Some limits on our capacity for processing information.** *Psychological Review*, 63(2):81, 1956.
- [1561] G. Minella, R. Ruiz, and M. Ciavotta. **A Review and Evaluation of Multiobjective Algorithms for the Flowshop Scheduling Problem.** *INFORMS Journal on Computing*, 20(3):451–471, 2008.
- [1562] S. Minton. **Automatically configuring constraint satisfaction programs: A case study.** *Constraints*, 1(1):7–43, 1996. doi:10.1007/BF00143877.
- [1563] P. Miranda, R. M. Silva, and R. B. Prudêncio. **Fine-Tuning of Support Vector Machine Parameters using Racing Algorithms.** In *European Symposium on Artificial Neural Networks, ESSAN*, pages 325–330, 2014.  
Annotation: <https://www.elen.ucl.ac.be/esann/proceedings/papers.php?ann=2014>.
- [1564] P. Miranda, R. M. Silva, and R. B. Prudêncio. **I/S-Race: An Iterative Multi-objective Racing Algorithm for the SVM Parameter Selection Problem.** In *European Symposium on Artificial Neural Networks, ESSAN*, pages 573–578, 2015.  
Annotation: <https://www.elen.ucl.ac.be/esann/proceedings/papers.php?ann=2015>.

- [1565] A. Misevičius. **Genetic Algorithm Hybridized with Ruin and Recreate Procedure: Application to the Quadratic Assignment Problem.** *Knowledge Based Systems*, 16(5–6):261–268, 2003.
- [1566] A. Misevičius. **Ruin and Recreate Principle Based Approach for the Quadratic Assignment Problem.** In E. Cantú-Paz et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2003, Part I*, volume 2723 of *Lecture Notes in Computer Science*, pages 598–609. Springer, Heidelberg, Germany, 2003.
- [1567] A. Misevičius. **A modified simulated annealing algorithm for the quadratic assignment problem.** *Informatica*, 14(4):497–514, 2003.
- [1568] D. G. Mitchell, B. Selman, and H. J. Levesque. **Hard and Easy Distributions of SAT Problems.** In W. R. Swartout, editor, *Proceedings of the 10th National Conference on Artificial Intelligence*, pages 459–465. AAAI Press/MIT Press, Menlo Park, CA, 1992.
- [1569] D. Mitra, F. Romeo, and A. Sangiovanni-Vincentelli. **Convergence and Finite-Time Behavior of Simulated Annealing.** In *Decision and Control, 1985 24th IEEE Conference on*, pages 761–767. IEEE, 1985.
- [1570] ML4AAD Group. **SMAC v3 Project.** <https://github.com/automl/SMAC3>, 2017. Version visited last on August 2017.
- [1571] N. Mladenović and P. Hansen. **Variable Neighborhood Search.** *Computers & Operations Research*, 24(11):1097–1100, 1997.
- [1572] V. Mnih, C. Szepesvári, and J.-Y. Audibert. **Empirical Bernstein stopping.** In W. W. Cohen, A. McCallum, and S. T. Roweis, editors, *Proceedings of the 25th International Conference on Machine Learning*, pages 672–679. ACM Press, New York, NY, 2008.
- [1573] V. Mnih, K. Kavukcuoglu, D. Silver, A. A. Rusu, J. Veness, M. G. Bellemare, A. Graves, M. Riedmiller, A. K. Fidjeland, G. Ostrovski, et al. **Human-level control through deep reinforcement learning.** *Nature*, 518(7540):529, 2015.
- [1574] J. Mockus. *Bayesian Approach to Global Optimization: Theory and Applications*. Kluwer Academic Publishers, 1989.
- [1575] A. Moghaddam, F. Yalaoui, and L. Amodeo. **Lorenz versus Pareto Dominance in a Single Machine Scheduling Problem with Rejection.** In R. H. C. Takahashi et al., editors, *Evolutionary Multi-criterion Optimization, EMO 2011*, volume 6576 of *Lecture Notes in Computer Science*, pages 520–534. Springer, Heidelberg, Germany, 2011.
- [1576] A. Mondoro, D. M. Frangopol, and L. Liu. **Multi-criteria robust optimization framework for bridge adaptation under climate change.** *Structural Safety*, 74: 14–23, 2018.
- [1577] J.-N. Monette, Y. Deville, and P. van Hentenryck. **Aeon: Synthesizing Scheduling Algorithms from High-Level Models.** In J. W. Chinneck, B. Kristjansson, and M. J. Saltzman, editors, *Operations Research and Cyber-Infrastructure*, volume 47 of *Operations Research/Computer Science Interfaces*, pages 43–59. Springer, New York, NY, 2009.
- [1578] N. Monmarché, G. Venturini, and M. Slimane. **On how *pachycondyla apicalis* ants suggest a new search algorithm.** *Future Generation Computer Systems*, 16(8): 937–946, 2000.

- [1579] N. Monmarché, E.-G. Talbi, P. Collet, M. Schoenauer, and E. Lutton, editors. *Artificial Evolution, 8th International Conference, Evolution Artificielle, EA 2007, Tours, France, October 29-31, 2007 Revised Selected Papers*, volume 4926 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2008. doi:[10.1007/978-3-540-79305-2](https://doi.org/10.1007/978-3-540-79305-2).
- [1580] R. Monroy, G. Arroyo-Figueroa, L. E. Sucar, and H. Sossa, editors. *MICAI 2004: Advances in Artificial Intelligence: Third Mexican International Conference on Artificial Intelligence, Mexico City, Mexico, April 26-30, 2004. Proceedings*, volume 2972 of *Lecture Notes in Artificial Intelligence*. Springer, Heidelberg, Germany, 2004.
- [1581] R. Montemanni, L. M. Gambardella, A. E. Rizzoli, and A. V. Donati. **Ant colony system for a dynamic vehicle routing problem**. *Journal of Combinatorial Optimization*, 10: 327–343, 2005.
- [1582] E. Montero and M.-C. Riff. **Towards a Method for Automatic Algorithm Configuration: A Design Evaluation Using Tuners**. In T. Bartz-Beielstein, J. Branke, B. Filipič, and J. Smith, editors, *PPSN 2014*, volume 8672 of *Lecture Notes in Computer Science*, pages 90–99. Springer, Heidelberg, Germany, 2014. doi:[10.1007/978-3-319-10762-2\\_9](https://doi.org/10.1007/978-3-319-10762-2_9).
- [1583] E. Montero, M.-C. Riff, and B. Neveu. **An Evaluation of Off-line Calibration Techniques for Evolutionary Algorithms**. In M. Pelikan and J. Branke, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2010*, pages 299–300, New York, NY, 2010. ACM Press.
- [1584] E. Montero, L. Pérez Cáceres, M.-C. Riff, and C. A. Coello Coello. **Are State-of-the-Art Fine-Tuning Algorithms Able to Detect a Dummy Parameter?** In C. A. Coello Coello et al., editors, *Parallel Problem Solving from Nature, PPSN XII*, volume 7491 of *Lecture Notes in Computer Science*, pages 306–315. Springer, Heidelberg, Germany, 2012. doi:[10.1007/978-3-642-32937-1\\_31](https://doi.org/10.1007/978-3-642-32937-1_31).
- [1585] E. Montero, M.-C. Riff, and B. Neveu. **A Beginner’s Buide to Tuning Methods**. *Applied Soft Computing*, 17:39–51, 2014. doi:[10.1016/j.asoc.2013.12.017](https://doi.org/10.1016/j.asoc.2013.12.017).
- [1586] M. A. Montes de Oca. *Incremental Social Learning in Swarm Intelligence Systems*. PhD thesis, IRIDIA, École polytechnique, Université Libre de Bruxelles, Belgium, 2011. Annotation: Supervised by Marco Dorigo.
- [1587] M. A. Montes de Oca, T. Stützle, M. Birattari, and M. Dorigo. **Frankenstein’s PSO: A Composite Particle Swarm Optimization Algorithm**. *IEEE Transactions on Evolutionary Computation*, 13(5):1120–1132, 2009. doi:[10.1109/TEVC.2009.2021465](https://doi.org/10.1109/TEVC.2009.2021465).
- [1588] M. A. Montes de Oca, D. Aydın, and T. Stützle. **An Incremental Particle Swarm for Large-Scale Continuous Optimization Problems: An Example of Tuning-in-the-loop (Re)Design of Optimization Algorithms**. *Soft Computing*, 15(11):2233–2255, 2011. doi:[10.1007/s00500-010-0649-0](https://doi.org/10.1007/s00500-010-0649-0).
- [1589] D. C. Montgomery. *Design and Analysis of Experiments*. John Wiley & Sons, New York, NY, eighth edition, 2012.
- [1590] J. Montgomery. *Solution Biases and Pheromone Representation Selection in Ant Colony Optimisation*. PhD thesis, School of Information Technology, Bond University, Australia, 2005.

- [1591] J. Montgomery, M. Randall, and T. Hendtlass. **Solution bias in ant colony optimisation: Lessons for selecting pheromone models.** *Computers & Operations Research*, 35(9):2728–2749, 2008. doi:[10.1016/j.cor.2006.12.014](https://doi.org/10.1016/j.cor.2006.12.014).
- [1592] G. Montibeller and H. Yoshizaki. **A Framework for Locating Logistic Facilities with Multi-Criteria Decision Analysis.** In R. H. C. Takahashi et al., editors, *Evolutionary Multi-criterion Optimization, EMO 2011*, volume 6576 of *Lecture Notes in Computer Science*, pages 505–519. Springer, Heidelberg, Germany, 2011.
- [1593] A. W. Moore and M. S. Lee. **Efficient Algorithms for Minimizing Cross Validation Error.** In W. W. Cohen and H. Hirsh, editors, *Proceedings of the 11th International Conference on Machine Learning*, pages 190–198, San Francisco, CA, 1994. Morgan Kaufmann Publishers.
- [1594] A. M. Mora and G. Squillero, editors. *Applications of Evolutionary Computation, EvoApplications 2015*, volume 9028 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2015.
- [1595] A. M. Mora, J. J. Merelo, J. L. J. Laredo, C. Millan, and J. Torrecillas. **CHAC, a MOACO algorithm for computation of bi-criteria military unit path in the battlefield: Presentation and first results.** *International Journal of Intelligent Systems*, 24(7):818–843, 2009.
- [1596] A. Moraglio and A. Kattan. **Geometric Generalisation of Surrogate Model Based Optimization to Combinatorial Spaces.** In P. Merz and J.-K. Hao, editors, *Proceedings of EvoCOP 2011 – 11th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 6622 of *Lecture Notes in Computer Science*, pages 142–154. Springer, Heidelberg, Germany, 2011.
- [1597] A. Moraglio, Y. Kim, and Y. Yoon. **Geometric Surrogate-based Optimisation for Permutation-based Problems.** In N. Krasnogor and P. L. Lanzi, editors, *GECCO (Companion)*, pages 133–134. ACM Press, New York, NY, 2011.
- [1598] A. Moraglio, S. Silva, K. Krawiec, P. Machado, and C. Cotta, editors. *Proceedings of the 15th European Conference on Genetic Programming, EuroGP 2012*, volume 7244 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2012.
- [1599] P. D. Morgan. **Simulation of an adaptive behavior mechanism in an expert decision-maker.** *IEEE Transactions on Systems, Man, and Cybernetics*, 23(1):65–76, 1993.
- [1600] S. Morin, C. Gagné, and M. Gravel. **Ant colony optimization with a specialized pheromone trail for the car-sequencing problem.** *European Journal of Operational Research*, 197(3):1185–1191, 2009. doi:[10.1016/j.ejor.2008.03.033](https://doi.org/10.1016/j.ejor.2008.03.033).  
*Keywords:* Ant colony optimization, Car-sequencing problem, Pheromone trail, Scheduling.
- [1601] M. D. Morris and T. J. Mitchell. **Exploratory designs for computational experiments.** *Journal of Statistical Planning and Inference*, 43(3):381–402, 1995. doi:[10.1016/0378-3758\(94\)00035-T](https://doi.org/10.1016/0378-3758(94)00035-T).  
*Keywords:* Bayesian prediction.
- [1602] P. Morris. **The Breakout Method for Escaping from Local Minima.** In R. Fikes and W. G. Lehnert, editors, *Proceedings of the 11th National Conference on Artificial Intelligence*, pages 40–45. AAAI Press/MIT Press, Menlo Park, CA, 1993.

- [1603] J. N. Morse. **Reducing the size of the nondominated set: Pruning by clustering.** *Computers & Operations Research*, 7(1-2):55–66, 1980.
- [1604] P. Moscato. **On Evolution, Search, Optimization, Genetic Algorithms and Martial Arts: Towards Memetic Algorithms.** Caltech Concurrent Computation Program, C3P Report 826, Caltech, 1989.
- [1605] P. Moscato. **Memetic algorithms: a short introduction.** In D. Corne, M. Dorigo, and F. Glover, editors, *New Ideas in Optimization*, pages 219–234. McGraw Hill, London, UK, 1999.
- [1606] P. Moscato and J. F. Fontanari. **Stochastic Versus Deterministic Update in Simulated Annealing.** *Physics Letters A*, 146(4):204–208, 1990.
- [1607] J. D. Moss and C. G. Johnson. **An ant colony algorithm for multiple sequence alignment in bioinformatics.** In D. W. Pearson, N. C. Steele, and R. F. Albrecht, editors, *Artificial Neural Networks and Genetic Algorithms*, pages 182–186. Springer Verlag, 2003.
- [1608] J. Mostow and C. Rich, editors. *Proceedings of the Fifteenth National Conference on Artificial Intelligence and Tenth Innovative Applications of Artificial Intelligence Conference, AAAI 98, IAAI 98, July 26-30, 1998, Madison, Wisconsin, USA*, 1998. AAAI Press/MIT Press, Menlo Park, CA.
- [1609] V. Mousseau. *Elicitation des préférences pour l’aide multicritère à la décision*. PhD thesis, Université Paris-Dauphine, Paris, France, 2003.
- [1610] V. Mousseau and R. Słowiński. **Inferring an ELECTRE TRI model from assignment examples.** *Journal of Global Optimization*, 12(2):157–174, 1998.
- [1611] S. Mouthuy, Y. Deville, and P. van Hentenryck. **Constraint-based Very Large-Scale Neighborhood Search.** *Constraints*, 17(2):87–122, 2012. doi:10.1007/s10601-011-9114-7.
- [1612] J. Moy. **RFC 1583: Open shortest path first protocol**, 1994.
- [1613] M. Mozer, M. I. Jordan, and T. Petsche, editors. *Advances in Neural Information Processing Systems 9, NIPS, Denver, CO, USA, December 2-5, 1996*. MIT Press, 1996.
- [1614] Z. Mu, H. H. Hoos, and T. Stützle. **The Impact of Automated Algorithm Configuration on the Scaling Behaviour of State-of-the-Art Inexact TSP Solvers.** In P. Festa, M. Sellmann, and J. Vanschoren, editors, *Learning and Intelligent Optimization, 10th International Conference, LION 10*, volume 10079 of *Lecture Notes in Computer Science*, pages 157–172. Springer, Cham, Switzerland, 2016. doi:10.1007/978-3-319-50349-3\_11.
- [1615] Z. Mu, J. Dubois-Lacoste, H. H. Hoos, and T. Stützle. **On the Empirical Scaling of Running Time for Finding Optimal Solutions to the TSP: Supplementary material.** <http://iridia.ulb.ac.be/supp/IridiaSupp2017-010/>, 2017.
- [1616] F. Mueller, editor. *Proceedings of the 2011 IEEE International Parallel & Distributed Processing Symposium, IPDPS ’11*, 2011. IEEE Computer Society.



- [1617] H. Mühlenbein. **Evolution in Time and Space—The Parallel Genetic Algorithm.** In G. Rawlins, editor, *Foundations of Genetic Algorithms (FOGA)*, pages 316–337. Morgan Kaufmann Publishers, San Mateo, CA, 1991.
- [1618] H. Mühlenbein and D. Schlierkamp-Voosen. **Predictive models for the breeder genetic algorithm.** *Evolutionary Computation*, 1(1):25–49, 1993.  
*Keywords:* crossover, intermediate, line.
- [1619] M. Mühlenthaler. *Fairness in academic course timetabling*. Springer, 2015. doi:10.1007/978-3-319-12799-6.  
*Keywords:* irace.
- [1620] C. L. Müller and I. F. Sbalzarini. **Energy Landscapes of Atomic Clusters as Black Box Optimization Benchmarks.** *Evolutionary Computation*, 20(4):543–573, 2012. doi:10.1162/EVC0\_a\_00086.
- [1621] M. A. Muñoz, Y. Sun, M. Kirley, and S. K. Halgamuge. **Algorithm selection for black-box continuous optimization problems: a survey on methods and challenges.** *Information Sciences*, 317:224–245, 2015.
- [1622] L. J. Murphy, G. C. Dandy, and A. R. Simpson. **Optimum Design and Operation of Pumped Water Distribution Systems.** In *1994 International Conference on Hydraulics and Civil Engineering, Hydraulic working with the Environment*, pages 149–155, Brisbane, Australia, Feb. 1994. The Institution of Engineers.
- [1623] NAFIPS. *Proceedings of the NAFIPS-FLINT International Conference’2002*, Piscataway, New Jersey, June 2002. IEEE Service Center.
- [1624] M. S. Nagano, F. L. Rossi, and N. J. Martarelli. **High-performing heuristics to minimize flowtime in no-idle permutation flowshop.** *Engineering Optimization*, 51(2):185–198, 2019.
- [1625] Y. Nagata and S. Kobayashi. **Edge Assembly Crossover: A High-power Genetic Algorithm for the Traveling Salesman Problem.** In T. Bäck, editor, *ICGA*, pages 450–457. Morgan Kaufmann Publishers, San Francisco, CA, 1997.
- [1626] Y. Nagata and S. Kobayashi. **A Powerful Genetic Algorithm Using Edge Assembly Crossover for the Traveling Salesman Problem.** *INFORMS Journal on Computing*, 25(2):346–363, 2013. doi:10.1287/ijoc.1120.0506.  
*Keywords:* TSP, EAX, evolutionary algorithms.
- [1627] Y. Nagata and D. Soler. **A New Genetic Algorithm for the Asymmetric TSP.** *Expert Systems with Applications*, 39(10):8947–8953, 2012.
- [1628] R. Nagy, M. Suci, and D. Dumitrescu. **Exploring Lorenz Dominance.** In *Symbolic and Numeric Algorithms for Scientific Computing (SYNASC), 2012 14th International Symposium on*, pages 254–259, 2012.
- [1629] V. Nair and G. E. Hinton. **Rectified linear units improve restricted boltzmann machines.** In J. Fürnkranz and T. Joachims, editors, *Proceedings of the 27th international conference on machine learning (ICML-10)*, pages 807–814. ACM Press, New York, NY, 2010.



- [1630] S. Nallaperuma, M. Wagner, and F. Neumann. **Parameter Prediction Based on Features of Evolved Instances for Ant Colony Optimization and the Traveling Salesperson Problem.** In T. Bartz-Beielstein, J. Branke, B. Filipič, and J. Smith, editors, *PPSN 2014*, volume 8672 of *Lecture Notes in Computer Science*, pages 100–109. Springer, Heidelberg, Germany, 2014. doi:10.1007/978-3-319-10762-2\_10.
- [1631] V. Nannen and A. E. Eiben. **A Method for Parameter Calibration and Relevance Estimation in Evolutionary Algorithms.** In M. Cattolico et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2006*, pages 183–190. ACM Press, New York, NY, 2006. doi:10.1145/1143997.1144029.  
*Keywords:* REVAC.
- [1632] V. Nannen and A. E. Eiben. **Relevance Estimation and Value Calibration of Evolutionary Algorithm Parameters.** In M. M. Veloso, editor, *Proceedings of the Twentieth International Joint Conference on Artificial Intelligence (IJCAI-07)*, pages 975–980. AAAI Press, Menlo Park, CA, 2007.  
*Keywords:* REVAC.
- [1633] K. Naono, K. Teranishi, J. Cavazos, and R. Suda, editors. *Software Automatic Tuning: From Concepts to State-of-the-Art Results*. Springer, 2010.
- [1634] J. Nash and R. Varadhan. **Unifying Optimization Algorithms to Aid Software System Users: `optimx` for R.** *Journal of Statistical Software*, 43(9):1–14, 2011.
- [1635] Y. S. G. Nashed, P. Mesejo, R. Ugolotti, J. Dubois-Lacoste, and S. Cagnoni. **A Comparative Study of Three GPU-Based Metaheuristics.** In C. A. Coello Coello et al., editors, *PPSN 2012, Part II*, volume 7492 of *Lecture Notes in Computer Science*, pages 398–407. Springer, Heidelberg, Germany, 2012. doi:10.1007/978-3-642-32964-7\_40.
- [1636] M. Nawaz, E. Ensore, Jr, and I. Ham. **A Heuristic Algorithm for the  $m$ -Machine,  $n$ -Job Flow-Shop Sequencing Problem.** *Omega*, 11(1):91–95, 1983.
- [1637] B. Nebel, editor. *IJCAI 2001, Proceedings of the 17th International Joint Conference on Artificial Intelligence*, 2001. IEEE Press.
- [1638] A. J. Nebro, J. J. Durillo, and M. Vergne. **Redesigning the jMetal Multi-Objective Optimization Framework.** In J. L. J. Laredo, S. Silva, and A. I. Esparcia-Alcázar, editors, *GECCO (Companion)*, pages 1093–1100. ACM Press, New York, NY, 2015.  
*Keywords:* jmetal, multi-objective metaheuristics, open source, optimization framework.
- [1639] A. J. Nebro, M. López-Ibáñez, C. Barba-González, and J. García-Nieto. **Automatic Configuration of NSGA-II with jMetal and irace.** In M. López-Ibáñez, A. Auger, and T. Stützle, editors, *GECCO’19 Companion*. ACM Press, New York, NY, 2019. doi:10.1145/3319619.3326832.
- [1640] G. L. Nemhauser and L. A. Wolsey. *Integer and Combinatorial Optimization*. John Wiley & Sons, New York, NY, 1988.
- [1641] F. Neri, C. Cotta, and P. Moscato. *Handbook of Memetic Algorithms*, volume 379 of *Studies in Computational Intelligence*. Springer, 2011.

- [1642] F. Nerri and C. Cotta. **Memetic algorithms and memetic computing optimization: A literature review.** *Swarm and Evolutionary Computation*, 2:1–14, 2012. doi:10.1016/j.swevo.2011.11.003.
- [1643] F. Neumann and C. Witt. **Runtime Analysis of a Simple Ant Colony Optimization Algorithm.** *Electronic Colloquium on Computational Complexity (ECCC)*, 13(084), 2006.
- [1644] F. Neumann, D. Sudholt, and C. Witt. **Analysis of different MMAS ACO algorithms on unimodal functions and plateaus.** *Swarm Intelligence*, 3(1):35–68, 2009.
- [1645] A.-T. Nguyen, S. Reiter, and P. Rigo. **A review on simulation-based optimization methods applied to building performance analysis.** *Applied Energy*, 113:1043–1058, 2014. doi:10.1016/j.apenergy.2013.08.061.
- [1646] S. Nguyen, M. Zhang, M. Johnston, and K. C. Tan. **Genetic Programming for Evolving Due-Date Assignment Models in Job Shop Environments.** *Evolutionary Computation*, 22(1):105–138, 2014.
- [1647] S. Nguyen, M. Zhang, M. Johnston, and K. C. Tan. **Automatic Design of Scheduling Policies for Dynamic Multi-objective Job Shop Scheduling via Cooperative Coevolution Genetic Programming.** *IEEE Transactions on Evolutionary Computation*, 18(2):193–208, 2014.
- [1648] T. T. Nguyen, S. Yang, and J. Branke. **Evolutionary Dynamic Optimization: A Survey of the State of the Art.** *Swarm and Evolutionary Computation*, 6:1–24, 2012.
- [1649] V.-P. Nguyen, C. Prins, and C. Prodhon. **A Multi-start Iterated Local Search with Tabu List and Path Relinking for the Two-echelon Location-routing Problem.** *Engineering Applications of Artificial Intelligence*, 25(1):56–71, 2012.
- [1650] P. Nightingale, O. Akgün, I. P. Gent, C. Jefferson, I. Miguel, and P. Spracklen. **Automatically Improving Constraint Models in Savile Row.** *Artificial Intelligence*, 251:35–61, 2017.
- [1651] A. G. Nikolaev and S. H. Jacobson. **Simulated Annealing.** In M. Gendreau and J.-Y. Potvin, editors, *Handbook of Metaheuristics*, volume 146 of *International Series in Operations Research & Management Science*, pages 1–39. Springer, New York, NY, 2 edition, 2010.
- [1652] M. Nikolić, F. Marić, and P. Janičić. **Instance-based selection of policies for SAT solvers.** In *International Conference on Theory and Applications of Satisfiability Testing*, pages 326–340. Springer, 2009.
- [1653] Y. Nishio, A. Oyama, Y. Akimoto, H. Aguirre, and K. Tanaka. **Many-objective Optimization of Trajectory Design for DESTINY Mission.** In P. M. Pardalos, M. G. C. Resende, C. Vogiatzis, and J. L. Walteros, editors, *Learning and Intelligent Optimization, 8th International Conference, LION 8*, volume 8426 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2014.
- [1654] V. Nitivattananon, E. C. Sadowski, and R. G. Quimpo. **Optimization of Water Supply System Operation.** *Journal of Water Resources Planning and Management, ASCE*, 122(5):374–384, Sept. / Oct. 1996.

- [1655] M. S. Nixon and A. S. Aguado. *Feature extraction & image processing for computer vision*. Academic Press, 2012.
- [1656] J. Nocedal and S. J. Wright. *Numerical Optimization*. Springer Series in Operations Research and Financial Engineering. Springer, second edition, 2006.
- [1657] B. Nogueira, R. G. S. Pinheiro, and A. Subramanian. **A Hybrid Iterated Local Search Heuristic for the Maximum Weight Independent Set Problem**. *Optimization Letters*, 12(3):567–583, 2018. doi:[10.1007/s11590-017-1128-7](https://doi.org/10.1007/s11590-017-1128-7).
- [1658] Y. Nourani and B. Andresen. **A Comparison of Simulated Annealing Cooling Strategies**. *Journal of Physics A*, 31(41):8373–8385, 1998.
- [1659] H. E. Nouri, O. B. Driss, and K. Ghédira. **A Classification Schema for the Job Shop Scheduling Problem with Transportation Resources: State-of-the-Art Review**. In R. Silhavy, R. Senkerik, Z. K. Oplatkova, P. Silhavy, and Z. Prokopova, editors, *Artificial Intelligence Perspectives in Intelligent Systems*, volume 464 of *Advances in Intelligent Systems and Computing*, pages 1–11. Springer International Publishing, Switzerland, 2016.
- [1660] K. Nowak, M. Mörtens, and D. Izzo. **Empirical Performance of the Approximation of the Least Hypervolume Contributor**. In T. Bartz-Beielstein, J. Branke, B. Filipič, and J. Smith, editors, *PPSN 2014*, volume 8672 of *Lecture Notes in Computer Science*, pages 662–671. Springer, Heidelberg, Germany, 2014.
- [1661] E. Nowicki and C. Smutnicki. **A Fast Taboo Search Algorithm for the Job Shop Problem**. *Management Science*, 42(6):797–813, 1996.
- [1662] E. Nowicki and C. Smutnicki. **A fast tabu search algorithm for the permutation flow-shop problem**. *European Journal of Operational Research*, 91(1):160–175, 1996.
- [1663] S. Obayashi et al., editors. *Proceedings of Evolutionary Multi-criterion Optimization, EMO 2007*, volume 4403 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2007.
- [1664] G. Ochoa, M. Hyde, T. Curtois, J. A. Vazquez-Rodriguez, J. Walker, M. Gendreau, G. Kendall, B. McCollum, A. J. Parkes, S. Petrovic, and E. K. Burke. **Hyflex: A benchmark framework for cross-domain heuristic search**. In J.-K. Hao and M. Middendorf, editors, *Proceedings of EvoCOP 2012 – 12th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 7245 of *Lecture Notes in Computer Science*, pages 136–147. Springer, Heidelberg, Germany, 2012.
- [1665] A. Oddi, A. Cesta, N. Policella, and S. F. Smith. **Combining Variants of Iterative Flattening Search**. *Engineering Applications of Artificial Intelligence*, 21(5):683–690, 2008.
- [1666] A. Oddi, A. Cesta, N. Policella, and S. F. Smith. **Iterative Flattening Search for Resource Constrained Scheduling**. *Journal of Intelligent Manufacturing*, 21(1):17–30, 2010.
- [1667] A. Oddi, R. Rasconi, A. Cesta, and S. F. Smith. **Iterative Flattening Search for the Flexible Job Shop Scheduling Problem**. In T. Walsh, editor, *Proceedings of the Twenty-Second International Joint Conference on Artificial Intelligence (IJCAI-11)*, pages 1991–1996. IJCAI/AAAI Press, Menlo Park, CA, 2011.

- [1668] F. A. Ogbu and D. K. Smith. **The Application of the Simulated Annealing Algorithm to the Solution of the n/m/C Max Flowshop Problem.** *Computers & Operations Research*, 17(3):243–253, 1990.
- [1669] J. W. Ohlmann and B. W. Thomas. **A Compressed-Annealing Heuristic for the Traveling Salesman Problem with Time Windows.** *INFORMS Journal on Computing*, 19(1):80–90, 2007. ISSN 1526-5528. doi:[10.1287/ijoc.1050.0145](https://doi.org/10.1287/ijoc.1050.0145).
- [1670] V. Ojalehto, D. Podkopaev, and K. Miettinen. **Towards Automatic Testing of Reference Point Based Interactive Methods.** In J. Handl, E. Hart, P. R. Lewis, M. López-Ibáñez, G. Ochoa, and B. Paechter, editors, *Parallel Problem Solving from Nature - PPSN XIV*, volume 9921 of *Lecture Notes in Computer Science*, pages 483–492. Springer, Heidelberg, Germany, 2016. ISBN 978-3-319-45822-9. doi:[10.1007/978-3-319-45823-6\\_45](https://doi.org/10.1007/978-3-319-45823-6_45).
- [1671] S. M. Oliveira, M. S. Hussin, A. Roli, M. Dorigo, and T. Stützle. **Analysis of the Population-based Ant Colony Optimization Algorithm for the TSP and the QAP.** In *Proceedings of the 2017 Congress on Evolutionary Computation (CEC 2017)*, pages 1734–1741. IEEE Press, Piscataway, NJ, 2017.
- [1672] R. S. Olson, N. Bartley, R. J. Urbanowicz, and J. H. Moore. **Evaluation of a Tree-based Pipeline Optimization Tool for Automating Data Science.** In T. Friedrich, F. Neumann, and A. M. Sutton, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2015*, pages 485–492. ACM Press, New York, NY, 2016. doi:[10.1145/2908812.2908918](https://doi.org/10.1145/2908812.2908918).
- [1673] R. S. Olson, R. J. Urbanowicz, P. C. Andrews, N. A. Lavender, L. C. Kidd, and J. H. Moore. **Automating Biomedical Data Science Through Tree-Based Pipeline Optimization.** In G. Squillero and P. Burelli, editors, *Applications of Evolutionary Computation*, pages 123–137. Springer, Heidelberg, Germany, 2016. doi:[10.1007/978-3-319-31204-0\\_9](https://doi.org/10.1007/978-3-319-31204-0_9).
- [1674] R. Olsson and A. Løkketangen. **Using Automatic Programming to Generate State-of-the-art Algorithms for Random 3-SAT.** *Journal of Heuristics*, 19(5): 819–844, 2013.
- [1675] R. Olsson and A. Løkketangen. **Using automatic programming to generate state-of-the-art algorithms for random 3-SAT.** *Journal of Heuristics*, 19(5): 819–844, 2013. doi:[10.1007/s10732-013-9226-x](https://doi.org/10.1007/s10732-013-9226-x).
- [1676] M. Oltean. **Evolving Evolutionary Algorithms Using Linear Genetic Programming.** *Evolutionary Computation*, 13(3):387–410, 2005. doi:[10.1162/1063656054794815](https://doi.org/10.1162/1063656054794815).
- [1677] E. O’Mahony, E. Hebrard, A. Holland, C. Nugent, and B. O’Sullivan. **Using case-based reasoning in an algorithm portfolio for constraint solving.** In Bridge et al., editors, *Irish Conference on Artificial Intelligence and Cognitive Science*, pages 210–216, 2008.
- [1678] M. O’Neill and C. Ryan. **Grammatical Evolution.** *IEEE Transactions on Evolutionary Computation*, 5(4):349–358, 2001.
- [1679] L. E. Ormsbee and K. E. Lansey. **Optimal Control of Water Supply Pumping Systems.** *Journal of Water Resources Planning and Management, ASCE*, 120(2): 237–252, 1994.

- [1680] L. E. Ormsbee and S. L. Reddy. **Nonlinear Heuristic for Pump Operations**. *Journal of Water Resources Planning and Management, ASCE*, 121(4):302–309, July / Aug. 1995.
- [1681] L. E. Ormsbee, T. M. Walski, D. V. Chase, and W. W. Sharp. **Methodology for improving pump operation efficiency**. *Journal of Water Resources Planning and Management, ASCE*, 115(2):148–164, 1989.
- [1682] J. E. Orosz and S. H. Jacobson. **Analysis of Static Simulated Annealing Algorithms**. *Journal of Optimization Theory and Applications*, 115(1):165–182, 2002.
- [1683] OsaR Team. **OsaR: Scala in OR**, 2012. Available from <https://bitbucket.org/oscarlib/oscar>.
- [1684] I. H. Osman and C. N. Potts. **Simulated Annealing for Permutation Flow-Shop Scheduling**. *Omega*, 17(6):551–557, 1989.
- [1685] A. Ostfeld and E. Salomons. **Optimal Scheduling of Pumping and Chlorine Injections under Unsteady Hydraulics**. In G. Sehlke, D. F. Hayes, and D. K. Stevens, editors, *Critical Transitions In Water And Environmental Resources Management*, pages 1–9, July 2004.
- [1686] F. E. B. Otero, A. A. Freitas, and C. G. Johnson. **cAnt-Miner: An Ant Colony Classification Algorithm to Cope with Continuous Attributes**. In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 6th International Conference, ANTS 2008*, volume 5217 of *Lecture Notes in Computer Science*, pages 48–59. Springer, Heidelberg, Germany, 2008.
- [1687] P. S. Ow and T. E. Morton. **Filtered Beam Search in Scheduling**. *International Journal of Production Research*, 26:297–307, 1988.
- [1688] E. Özcan, E. K. Burke, and B. McCollum, editors. *PATAT 2014: Proceedings of the 10th International Conference of the Practice and Theory of Automated Timetabling*, 2014. PATAT.
- [1689] G. Özerol and E. Karasakal. **Interactive outranking approaches for multicriteria decision-making problems with imprecise information**. *Journal of the Operational Research Society*, 59:1253–1268, 2007.
- [1690] M. Öztürk, A. Tsoukiàs, and P. Vincke. **Preference Modelling**. In J. R. Figueira, S. Greco, and M. Ehrgott, editors, *Multiple Criteria Decision Analysis, State of the Art Surveys*, chapter 2, pages 27–72. Springer, 2005.
- [1691] PACT. *Proceedings of the 23rd International Conference on Parallel Architectures and Compilation*, 2014. ACM New York, NY, USA.
- [1692] M. Padberg and G. Rinaldi. **A branch-and-cut algorithm for the resolution of large-scale symmetric traveling salesman problems**. *SIAM Review*, 33(1):60–100, 1991.
- [1693] D. Padua, editor. *Encyclopedia of Parallel Computing*. Springer, US, 2011. [doi:10.1007/978-0-387-09766-4\\_244](https://doi.org/10.1007/978-0-387-09766-4_244).
- [1694] F. Pagnozzi and T. Stützle. **Speeding up Local Search for the Insert Neighborhood in the Weighted Tardiness Permutation Flowshop Problem**. *Optimization Letters*, 11:1283–1292, 2017. [doi:10.1007/s11590-016-1086-5](https://doi.org/10.1007/s11590-016-1086-5).

- [1695] F. Pagnozzi and T. Stützle. **Automatic Design of Hybrid Stochastic Local Search Algorithms for Permutation Flowshop Problems.** Technical Report TR/IRIDIA/2018-005, IRIDIA, Université Libre de Bruxelles, Belgium, Apr. 2018. URL <http://iridia.ulb.ac.be/IridiaTrSeries/IridiaTr2018-005.pdf>.
- [1696] F. Pagnozzi and T. Stützle. **Automatic Design of Hybrid Stochastic Local Search Algorithms for Permutation Flowshop Problems: Supplementary Material.** <http://iridia.ulb.ac.be/supp/IridiaSupp2018-002/>, 2018.
- [1697] F. Pagnozzi and T. Stützle. **Automatic design of hybrid stochastic local search algorithms for permutation flowshop problems.** *European Journal of Operational Research*, 276:409–421, 2019. doi:10.1016/j.ejor.2019.01.018.
- [1698] F. Pagnozzi and T. Stützle. **Automatic design of hybrid stochastic local search algorithms for permutation flowshop problems with additional constraints.** <http://iridia.ulb.ac.be/supp/IridiaSupp2018-002/>, 2019.
- [1699] D. Palhazi Cuervo, P. Goos, K. Sörensen, and E. Arráiz. **An Iterated Local Search Algorithm for the Vehicle Routing Problem with Backhauls.** *European Journal of Operational Research*, 237(2):454–464, 2014.
- [1700] I. Palomares, editor. *International Alan Turing Conference on Decision Support and Recommender systems (DSRC-Turing’19)*, London, UK, Nov., 21–22 2019. Alan Turing Institute. ISBN 978-1-5262-0820-0.
- [1701] Q.-K. Pan and R. Ruiz. **Local Search Methods for the Flowshop Scheduling Problem with Flowtime Minimization.** *European Journal of Operational Research*, 222(1):31–43, 2012.
- [1702] Q.-K. Pan and R. Ruiz. **A Comprehensive Review and Evaluation of Permutation Flowshop Heuristics to Minimize Flowtime.** *Computers & Operations Research*, 40(1):117–128, 2013.
- [1703] Q.-K. Pan, M. F. Tasgetiren, and Y.-C. Liang. **A Discrete Differential Evolution Algorithm for the Permutation Flowshop Scheduling Problem.** *Computers and Industrial Engineering*, 55(4):795 – 816, 2008.
- [1704] Q.-K. Pan, L. Wang, and B.-H. Zhao. **An improved iterated greedy algorithm for the no-wait flow shop scheduling problem with makespan criterion.** *International Journal of Advanced Manufacturing Technology*, 38(7-8):778–786, 2008.
- [1705] Q.-K. Pan, R. Ruiz, and P. Alfaro-Fernández. **Iterated Search Methods for Earliness and Tardiness Minimization in Hybrid Flowshops with Due Windows.** *Computers & Operations Research*, 80:50–60, 2017.
- [1706] B. K. Panigrahi, P. N. Suganthan, S. Das, and S. S. Dash, editors. *International Conference on Swarm, Evolutionary, and Memetic Computing*, volume 8298 of *Theoretical Computer Science and General Issues*, 2013. Springer International Publishing.
- [1707] C. H. Papadimitriou and K. Steiglitz. *Combinatorial Optimization – Algorithms and Complexity*. Prentice Hall, Englewood Cliffs, NJ, 1982.



- [1708] C. H. Papadimitriou and M. Yannakakis. **On the Approximability of Trade-offs and Optimal Access of Web Sources**. In A. Blum, editor, *41st Annual Symposium on Foundations of Computer Science*, pages 86–92. IEEE Computer Society Press, 2000. doi:[10.1109/SFCS.2000.892068](https://doi.org/10.1109/SFCS.2000.892068).
- [1709] L. Paquete. **Algoritmos Evolutivos Multiobjetivo para Afectação de Recursos e sua Aplicação à Geração de Horários em Universidades (Multiobjective Evolutionary Algorithms for Resource Allocation and their Application to University Timetabling)**. Master’s thesis, University of Algarve, 2001. In Portuguese.
- [1710] L. Paquete. *Stochastic Local Search Algorithms for Multiobjective Combinatorial Optimization: Methods and Analysis*. PhD thesis, FB Informatik, TU Darmstadt, Germany, 2005.
- [1711] L. Paquete and T. Stützle. **An Experimental Investigation of Iterated Local Search for Coloring Graphs**. In S. Cagnoni et al., editors, *Applications of Evolutionary Computing, Proceedings of EvoWorkshops 2002*, volume 2279 of *Lecture Notes in Computer Science*, pages 122–131. Springer, Heidelberg, Germany, 2002.
- [1712] L. Paquete and T. Stützle. **A Two-Phase Local Search for the Biobjective Traveling Salesman Problem**. In C. M. Fonseca, P. J. Fleming, E. Zitzler, K. Deb, and L. Thiele, editors, *Evolutionary Multi-criterion Optimization, EMO 2003*, volume 2632 of *Lecture Notes in Computer Science*, pages 479–493. Springer, Heidelberg, Germany, 2003.
- [1713] L. Paquete and T. Stützle. **A study of stochastic local search algorithms for the biobjective QAP with correlated flow matrices**. *European Journal of Operational Research*, 169(3):943–959, 2006.
- [1714] L. Paquete and T. Stützle. **Stochastic Local Search Algorithms for Multiobjective Combinatorial Optimization: A Review**. In T. F. Gonzalez, editor, *Handbook of Approximation Algorithms and Metaheuristics*, pages 29–1—29–15. Chapman & Hall/CRC, Boca Raton, FL, 2007.
- [1715] L. Paquete and T. Stützle. **Clusters of non-dominated solutions in multiobjective combinatorial optimization: An experimental analysis**. In V. Barichard, M. Ehrgott, X. Gandibleux, and V. T’Kindt, editors, *Multiobjective Programming and Goal Programming: Theoretical Results and Practical Applications*, volume 618 of *Lecture Notes in Economics and Mathematical Systems*, pages 69–77. Springer, Berlin, 2009. doi:[10.1007/978-3-540-85646-7](https://doi.org/10.1007/978-3-540-85646-7).
- [1716] L. Paquete and T. Stützle. **Design and analysis of stochastic local search for the multiobjective traveling salesman problem**. *Computers & Operations Research*, 36(9):2619–2631, 2009. doi:[10.1016/j.cor.2008.11.013](https://doi.org/10.1016/j.cor.2008.11.013).
- [1717] L. Paquete, M. Chiarandini, and T. Stützle. **Pareto Local Optimum Sets in the Biobjective Traveling Salesman Problem: An Experimental Study**. In X. Gandibleux, M. Sevaux, K. Sörensen, and V. T’Kindt, editors, *Metaheuristics for Multiobjective Optimisation*, volume 535 of *Lecture Notes in Economics and Mathematical Systems*, pages 177–200. Springer, Berlin, Germany, 2004.  
*Keywords:* Pareto local search, PLS.
- [1718] L. Paquete, T. Stützle, and M. López-Ibáñez. **On the design and analysis of SLS algorithms for multiobjective combinatorial optimization problems**. Technical

- Report TR/IRIDIA/2005-029, IRIDIA, Université Libre de Bruxelles, Belgium, 2005.  
URL <http://iridia.ulb.ac.be/IridiaTrSeries/IridiaTr2005-029r001.pdf>.
- [1719] L. Paquete, T. Stützle, and M. López-Ibáñez. **Towards the Empirical Analysis of SLS Algorithms for Multiobjective Combinatorial Optimization Problems through Experimental Design**. In K. F. Doerner, M. Gendreau, P. Greistorfer, W. J. Gutjahr, R. F. Hartl, and M. Reimann, editors, *6th Metaheuristics International Conference (MIC 2005)*, pages 739–746, Vienna, Austria, 2005.
- [1720] L. Paquete, M. Chiarandini, and D. Basso, editors. *Empirical Methods for the Analysis of Algorithms, Workshop EMAA 2006, Proceedings*, Reykjavik, Iceland, 2006.
- [1721] L. Paquete, C. M. Fonseca, and M. López-Ibáñez. **An optimal algorithm for a special case of Klee’s measure problem in three dimensions**. Technical Report CSI-RT-I-01/2006, CSI, Universidade do Algarve, 2006. Superseded by paper in IEEE Transactions on Evolutionary Computation [204].  
*Annotation:* Proof of Theorem 3.1 is incorrect.
- [1722] L. Paquete, T. Schiavinotto, and T. Stützle. **On Local Optima in Multiobjective Combinatorial Optimization Problems**. *Annals of Operations Research*, 156:83–97, 2007. doi:10.1007/s10479-007-0230-0.  
*Keywords:* Pareto local search, PLS.
- [1723] L. Paquete, T. Stützle, and M. López-Ibáñez. **Using experimental design to analyze stochastic local search algorithms for multiobjective problems**. In K. F. Doerner, M. Gendreau, P. Greistorfer, W. J. Gutjahr, R. F. Hartl, and M. Reimann, editors, *Metaheuristics: Progress in Complex Systems Optimization*, volume 39 of *Operations Research / Computer Science Interfaces*, pages 325–344. Springer, New York, NY, 2007. doi:10.1007/978-0-387-71921-4\_17.  
*Annotation:* Post-Conference Proceedings of the 6th Metaheuristics International Conference (MIC 2005).
- [1724] P. M. Pardalos and D.-Z. Du, editors. *Handbook of Combinatorial Optimization*, volume 2. Kluwer Academic Publishers, 1998.
- [1725] P. M. Pardalos and G. Nicosia, editors. *7th International Conference, LION 7, Catania, Italy, January 7-11, 2013. Selected Papers*, volume 7997 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2013.
- [1726] P. M. Pardalos, M. G. C. Resende, C. Vogiatzis, and J. L. Walteros, editors. *8th International Conference, LION 8, Gainesville, Florida, USA, February 16-21, 2014. Revised Selected Papers*, volume 8426 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2014.
- [1727] M.-W. Park and Y.-D. Kim. **A systematic procedure for setting parameters in simulated annealing algorithms**. *Computers & Operations Research*, 25(3):207–217, 1998. doi:10.1016/S0305-0548(97)00054-3.
- [1728] R. S. Parpinelli, H. S. Lopes, and A. A. Freitas. **Data Mining with an Ant Colony Optimization Algorithm**. *IEEE Transactions on Evolutionary Computation*, 6(4):321–332, 2002.
- [1729] S. N. Parragh, K. F. Doerner, R. F. Hartl, and X. Gandibleux. **A heuristic two-phase solution approach for the multi-objective dial-a-ride problem**. *Networks*, 54(4):227–242, 2009.

- [1730] R. O. Parreiras and J. A. Vasconcelos. **A multiplicative version of PROMETHEE II applied to multiobjective optimization problems.** *European Journal of Operational Research*, 183:729–740, 2007.
- [1731] R. Parsons and M. Johnson. **A Case Study in Experimental Design Applied to Genetic Algorithms with Applications to DNA Sequence Assembly.** *American Journal of Mathematical and Management Sciences*, 17(3-4):369–396, 1997. doi:10.1080/01966324.1997.10737444.
- [1732] G. Paul. **Comparative performance of tabu search and simulated annealing heuristics for the quadratic assignment problem.** *Operations Research Letters*, 38(6):577–581, 2010.
- [1733] J. Paulli. **A computational comparison of simulated annealing and tabu search applied to the quadratic assignment problem.** In R. V. V. Vidal, editor, *Applied Simulated Annealing*, pages 85–102. Springer, 1993.
- [1734] L. M. Pavelski, M. R. Delgado, and M.-E. Kessaci. **Meta-Learning on Flowshop Using Fitness Landscape Analysis.** In M. López-Ibáñez, A. Auger, and T. Stützle, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2019*, pages 925–933, New York, NY, 2019. ACM Press. ISBN 978-1-4503-6111-8.
- [1735] G. S. Peace. *Taguchi Methods: A Hands-On Approach*. Addison-Wesley, 1993.
- [1736] J. Pearl. *Heuristics: Intelligent Search Strategies for Computer Problem Solving*. Addison-Wesley, Reading, MA, 1984.
- [1737] D. W. Pearson, N. C. Steele, and R. F. Albrecht, editors. *Artificial Neural Networks and Genetic Algorithms*. Springer Verlag, 2003.
- [1738] M. Pedemonte, S. Nesmachnow, and H. Cancela. **A survey on parallel ant colony optimization.** *Applied Soft Computing*, 11(8):5181–5197, 2011.
- [1739] J. A. Pedraza, C. García-Martínez, A. Cano, and S. Ventura. **Classification Rule Mining with Iterated Greedy.** In M. M. Polycarpou, A. C. P. L. F. de Carvalho, J. Pan, M. Wozniak, H. Quintián, and E. Corchado, editors, *Hybrid Artificial Intelligence Systems - 9th International Conference, HAIS 2014, Salamanca, Spain, June 11-13, 2014. Proceedings*, volume 8480 of *Lecture Notes in Computer Science*, pages 585–596. Springer, Heidelberg, Germany, 2014.
- [1740] F. Pedregosa, G. Varoquaux, A. Gramfort, V. Michel, B. Thirion, O. Grisel, M. Blondel, P. Prettenhofer, R. Weiss, V. Dubourg, J. Vanderplas, A. Passos, D. Cournapeau, M. Brucher, M. Perrot, and E. Duchesnay. **Scikit-learn: Machine learning in Python.** *Journal of Machine Learning Research*, 12:2825–2830, 2011.
- [1741] M. Pelikan and J. Branke, editors. *Genetic and Evolutionary Computation Conference, GECCO 2010, Proceedings, Portland, Oregon, USA, July 7-11, 2010*. ACM Press, New York, NY, 2010.
- [1742] M. Pelikan and J. Branke, editors. *Genetic and Evolutionary Computation Conference, GECCO 2010, Companion Material Proceedings, Portland, Oregon, USA, July 7-11, 2010*. ACM Press, New York, NY, 2010.

- [1743] P. Pellegrini and M. Birattari. **Implementation Effort and Performance.** In T. Stützle, M. Birattari, and H. H. Hoos, editors, *Engineering Stochastic Local Search Algorithms. Designing, Implementing and Analyzing Effective Heuristics. SLS 2007*, volume 4638 of *Lecture Notes in Computer Science*, pages 31–45. Springer, Heidelberg, Germany, 2007.
- [1744] P. Pellegrini, D. Favaretto, and E. Moretti. **On MAX–MIN Ant System’s Parameters.** In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 5th International Workshop, ANTS 2006*, volume 4150 of *Lecture Notes in Computer Science*, pages 203–214. Springer, Heidelberg, Germany, 2006.
- [1745] P. Pellegrini, D. Favaretto, and E. Moretti. **Exploration in stochastic algorithms: An application on MAX–MIN Ant System.** In N. Krasnogor, B. Melián-Batista, J. A. Moreno-Pérez, J. M. Moreno-Vega, and D. A. Pelta, editors, *Nature Inspired Cooperative Strategies for Optimization (NICSO 2008)*, volume 236 of *Studies in Computational Intelligence*, pages 1–13. Springer, Berlin, Germany, 2009. doi:10.1007/978-3-642-03211-0.
- [1746] P. Pellegrini, T. Stützle, and M. Birattari. **Off-line vs. On-line Tuning: A Study on MAX–MIN Ant System for the TSP.** In M. Dorigo et al., editors, *Swarm Intelligence, 7th International Conference, ANTS 2010*, volume 6234 of *Lecture Notes in Computer Science*, pages 239–250. Springer, Heidelberg, Germany, 2010. doi:10.1007/978-3-642-15461-4\_21.
- [1747] P. Pellegrini, M. Birattari, and T. Stützle. **A Critical Analysis of Parameter Adaptation in Ant Colony Optimization.** *Swarm Intelligence*, 6(1):23–48, 2012. doi:10.1007/s11721-011-0061-0.
- [1748] P. Pellegrini, L. Castelli, and R. Pesenti. **Metaheuristic algorithms for the simultaneous slot allocation problem.** *IET Intelligent Transport Systems*, 6(4):453–462, Dec. 2012. doi:10.1049/iet-its.2011.0179.
- [1749] P. Pellegrini, F. Mascia, T. Stützle, and M. Birattari. **On the Sensitivity of Reactive Tabu Search to its Meta-parameters.** *Soft Computing*, 18(11):2177–2190, 2014. doi:10.1007/s00500-013-1192-6.
- [1750] M. Péres, G. Ruiz, S. Nesmachnow, and A. C. Olivera. **Multiobjective evolutionary optimization of traffic flow and pollution in Montevideo, Uruguay.** *Applied Soft Computing*, 70:472–485, 2018.  
*Keywords:* Multiobjective evolutionary algorithms, Pollution, Simulation, Traffic flow.
- [1751] L. Pérez Cáceres and T. Stützle. **Exploring Variable Neighborhood Search for Automatic Algorithm Configuration.** *Electronic Notes in Discrete Mathematics*, 58:167–174, 2017. doi:10.1016/j.endm.2017.03.022.
- [1752] L. Pérez Cáceres, M. López-Ibáñez, and T. Stützle. **Ant Colony Optimization on a Budget of 1000.** In M. Dorigo et al., editors, *Swarm Intelligence, 9th International Conference, ANTS 2014*, volume 8667 of *Lecture Notes in Computer Science*, pages 50–61. Springer, Heidelberg, Germany, 2014. doi:10.1007/978-3-319-09952-1\_5.
- [1753] L. Pérez Cáceres, M. López-Ibáñez, and T. Stützle. **An Analysis of Parameters of irace.** In C. Blum and G. Ochoa, editors, *Proceedings of EvoCOP 2014 – 14th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 8600 of

- Lecture Notes in Computer Science*, pages 37–48. Springer, Heidelberg, Germany, 2014. doi:10.1007/978-3-662-44320-0\_4.
- [1754] L. Pérez Cáceres, M. López-Ibáñez, and T. Stützle. **Ant Colony Optimization on a Budget of 1000: Supplementary material**, 2015. URL <http://iridia.ulb.ac.be/supp/IridiaSupp2015-004>.
- [1755] L. Pérez Cáceres, M. López-Ibáñez, and T. Stützle. **Ant colony optimization on a limited budget of evaluations**. *Swarm Intelligence*, 9(2-3):103–124, 2015. doi:10.1007/s11721-015-0106-x. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2015-004>.
- [1756] L. Pérez Cáceres, B. Bischl, and T. Stützle. **Evaluating random forest models for irace**. In P. A. N. Bosman, editor, *GECCO’17 Companion*, pages 1146–1153, New York, NY, 2017. ACM Press. doi:10.1145/3067695.3082057.
- [1757] L. Pérez Cáceres, M. López-Ibáñez, H. H. Hoos, and T. Stützle. **An experimental study of adaptive capping in irace**. In R. Battiti, D. E. Kvasov, and Y. D. Sergeyev, editors, *Learning and Intelligent Optimization, 11th International Conference, LION 11*, volume 10556 of *Lecture Notes in Computer Science*, pages 235–250. Springer, Cham, Switzerland, 2017. doi:10.1007/978-3-319-69404-7\_17. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2016-007/>.
- [1758] L. Pérez Cáceres, M. López-Ibáñez, H. H. Hoos, and T. Stützle. **An experimental study of adaptive capping in irace: Supplementary material**. <http://iridia.ulb.ac.be/supp/IridiaSupp2016-007/>, 2017.
- [1759] L. Pérez Cáceres, F. Pagnozzi, A. Franzin, and T. Stützle. **Automatic configuration of GCC using irace: Supplementary material**. <http://iridia.ulb.ac.be/supp/IridiaSupp2017-009/>, 2017.
- [1760] L. Pérez Cáceres, F. Pagnozzi, A. Franzin, and T. Stützle. **Automatic Configuration of GCC Using Irace**. In E. Lutton, P. Legrand, P. Parrend, N. Monmarché, and M. Schoenauer, editors, *EA 2017: Artificial Evolution*, volume 10764 of *Lecture Notes in Computer Science*, pages 202–216. Springer, Heidelberg, Germany, 2018.
- [1761] G. Pesant, M. Gendreau, J.-Y. Potvin, and J.-M. Rousseau. **An Exact Constraint Logic Programming Algorithm for the Traveling Salesman Problem with Time Windows**. *Transportation Science*, 32:12–29, 1998.
- [1762] A. Pessoa, E. Uchoa, M. Aragão, and R. Rodrigues. **Exact Algorithm over an Arc-time-indexed formulation for Parallel Machine Scheduling Problems**. *Mathematical Programming Computation*, 2(3–4):259–290, 2010.
- [1763] J. E. Pettinger and R. M. Everson. **Controlling genetic algorithms with reinforcement learning**. In W. B. Langdon et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2002*, pages 692–692. Morgan Kaufmann Publishers, San Francisco, CA, 2002.
- [1764] S. Pezeshk and O. J. Helweg. **Adaptative Search Optimisation in reducing pump operation costs**. *Journal of Water Resources Planning and Management, ASCE*, 122(1):57–63, Jan. / Feb. 1996.



- [1765] S. Phelps and M. Köksalan. **An interactive evolutionary metaheuristic for multiobjective combinatorial optimization.** *Management Science*, 49(12):1726–1738, 2003.
- [1766] M. L. Pilat and T. White. **Using Genetic Algorithms to optimize ACS-TSP.** In M. Dorigo et al., editors, *Ant Algorithms, Third International Workshop, ANTS 2002*, volume 2463 of *Lecture Notes in Computer Science*, pages 282–287. Springer, Heidelberg, Germany, 2002.
- [1767] M. L. Pinedo. *Scheduling: Theory, Algorithms, and Systems*. Springer, New York, NY, 4 edition, 2012.
- [1768] P. Pinto, T. Runkler, and J. Sousa. **Ant Colony Optimization and its Application to Regular and Dynamic MAX-SAT Problems.** In *Advances in Biologically Inspired Information Systems*, volume 69 of *Studies in Computational Intelligence*, pages 285–304. Springer, Berlin, Germany, 2007. doi:[10.1007/978-3-540-72693-7\\_15](https://doi.org/10.1007/978-3-540-72693-7_15).
- [1769] D. Pisinger and S. Ropke. **A General Heuristic for Vehicle Routing Problems.** *Computers & Operations Research*, 34(8):2403–2435, 2007.
- [1770] D. Pisinger and S. Ropke. **Large Neighborhood Search.** In M. Gendreau and J.-Y. Potvin, editors, *Handbook of Metaheuristics*, volume 146 of *International Series in Operations Research & Management Science*, pages 399–419. Springer, New York, NY, 2 edition, 2010.
- [1771] R. Pitakaso, C. Almeder, K. F. Doerner, and R. F. Hartl. **Combining exact and population-based methods for the Constrained Multilevel Lot Sizing Problem.** *International Journal of Production Research*, 44(22):4755–4771, 2006.
- [1772] R. Pitakaso, C. Almeder, K. F. Doerner, and R. F. Hartl. **A MAX-MIN Ant System for unconstrained multi-level lot-sizing problems.** *Computers & Operations Research*, 34(9):2533–2552, 2007. doi:[10.1016/j.cor.2005.09.022](https://doi.org/10.1016/j.cor.2005.09.022).  
Keywords: Ant colony optimization, Material requirements planning, Multi-level lot-sizing, Wagner-Whitin algorithm.
- [1773] D. Plotnikov, D. Melnik, M. Vardanyan, R. Buchatskiy, R. Zhuykov, and J.-H. Lee. **Automatic Tuning of Compiler Optimizations and Analysis of their Impact.** In V. Alexandrov, M. Lees, V. Krzhizhanovskaya, J. Dongarra, and P. M. Sloot, editors, *2013 International Conference on Computational Science*, volume 18 of *Procedia Computer Science*, pages 1312–1321. Elsevier, 2013. doi:[10.1016/j.procs.2013.05.298](https://doi.org/10.1016/j.procs.2013.05.298).
- [1774] M. E. Pollack, editor. *IJCAI 1997, Proceedings of the 15th International Joint Conference on Artificial Intelligence, IJCAI 97, Nagoya, Japan, August 23-29, 1997, 2 Volumes*. Morgan Kaufmann Publishers, 1997.
- [1775] J. Porta, J. Parapar, R. Doallo, V. Barbosa, I. Santé, R. Crecente, and C. Díaz. **A Population-based Iterated Greedy Algorithm for the Delimitation and Zoning of Rural Settlements.** *Computers, Environment and Urban Systems*, 39:12–26, 2013.
- [1776] V. W. Porto, N. Saravanan, D. Waagen, and A. E. Eiben, editors. *7th International Conference, EP98 San Diego, California, USA, March 25–27, 1998 Proceedings*, volume 1447 of *Lecture Notes in Computer Science*, 1998. Springer, Heidelberg, Germany. doi:[10.1007/BFb0040753](https://doi.org/10.1007/BFb0040753).



- [1777] D. Porumbel, G. Goncalves, H. Allaoui, and T. Hsu. **Iterated Local Search and Column Generation to solve Arc-Routing as a Permutation Set-Covering Problem.** *European Journal of Operational Research*, 256(2):349–367, 2017.
- [1778] J.-Y. Potvin and S. Bengio. **The Vehicle Routing Problem with Time Windows Part II: Genetic Search.** *INFORMS Journal on Computing*, 8:165–172, 1996.
- [1779] M. Powell. **The BOBYQA algorithm for bound constrained optimization without derivatives.** Technical Report Cambridge NA Report NA2009/06, University of Cambridge, UK, 2009.  
Annotation: <http://www6.cityu.edu.hk/rcms/publications/preprint26.pdf>.
- [1780] K. Praditwong and X. Yao. **A new multi-objective evolutionary optimisation algorithm: the two-archive algorithm.** In *Computational intelligence and security, 2006 international conference on*, volume 1, pages 286–291. IEEE, 2006.
- [1781] M. Pranzo and D. Pacciarelli. **An Iterated Greedy Metaheuristic for the Blocking Job Shop Scheduling Problem.** *Journal of Heuristics*, 22(4):587–611, 2016. doi:10.1007/s10732-014-9279-5.
- [1782] T. D. Prasad. **Design of pumped water distribution networks with storage.** *Journal of Water Resources Planning and Management, ASCE*, 136(4):129–136, 2009.
- [1783] T. D. Prasad and G. A. Walters. **Optimal rerouting to minimise residence times in water distribution networks.** In C. Maksimović, D. Butler, and F. A. Memon, editors, *Advances in Water Supply Management*, pages 299–306. CRC Press, 2003.
- [1784] F. P. Preparata and M. I. Shamos. *Computational Geometry. An Introduction*. Springer, Berlin, Germany, 2 edition, 1988.
- [1785] K. Price, R. M. Storn, and J. A. Lampinen. *Differential Evolution: A Practical Approach to Global Optimization*. Springer, New York, NY, 2005. doi:10.1007/3-540-31306-0.
- [1786] A. Prieditis and S. Russell, editors. *Proceedings of the Twelfth International Conference on Machine Learning (ML-95)*. Morgan Kaufmann Publishers, Palo Alto, CA, 1995.
- [1787] P. Probst, B. Bischl, and A.-L. Boulesteix. **Tunability: Importance of Hyperparameters of Machine Learning Algorithms.** *Arxiv preprint arXiv:1802.09596*, 2018.  
Keywords: parameter importance.
- [1788] L. Pronzato and W. G. Müller. **Design of computer experiments: space filling and beyond.** *Statistics and Computing*, 22(3):681–701, 2012.  
Keywords: Kriging; Entropy; Design of experiments; Space-filling; Sphere packing; Maximin design; Minimax design.
- [1789] A. Pryke, S. Mostaghim, and A. Nazemi. **Heatmap visualization of population based multi objective algorithms.** In S. Obayashi et al., editors, *Evolutionary Multi-criterion Optimization, EMO 2007*, volume 4403 of *Lecture Notes in Computer Science*, pages 361–375. Springer, Heidelberg, Germany, 2007.
- [1790] H. N. Psaraftis. **Dynamic Vehicle Routing: Status and Prospects.** *Annals of Operations Research*, 61:143–164, 1995.

- [1791] J. M. Puerta, J. A. Gámez, B. Dorronsoro, E. Barrenechea, A. Troncoso, B. Baruque, and M. Galar, editors. *Advances in Artificial Intelligence: 16th Conference of the Spanish Association for Artificial Intelligence, CAEPIA 2015 Albacete, Spain, November 9-12, 2015 Proceedings*, volume 9422 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2015.
- [1792] L. Pulina and A. Tacchella. **A self-adaptive multi-engine solver for quantified Boolean formulas**. *Constraints*, 14(1):80–116, 2009.
- [1793] R. C. Purshouse and P. J. Fleming. **On the Evolutionary Optimization of Many Conflicting Objectives**. *IEEE Transactions on Evolutionary Computation*, 11(6): 770–784, 2007. doi:10.1109/TEVC.2007.910138.
- [1794] R. C. Purshouse, P. J. Fleming, C. M. Fonseca, S. Greco, and J. Shaw, editors. *Evolutionary Multi-Criterion Optimization – 7th International Conference, EMO 2013, Sheffield, UK, March 19-22, 2013. Proceedings*, volume 7811 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2013. ISBN 978-3-642-37139-4.
- [1795] R. C. Purshouse, K. Deb, M. M. Mansor, S. Mostaghim, and R. Wang. **A review of hybrid evolutionary multiple criteria decision making methods**. COIN Report 2014005, Computational Optimization and Innovation (COIN) Laboratory, University of Michigan, USA, Jan. 2014.
- [1796] M. Püschel, F. Franchetti, and Y. Voronenko. **Spiral**. In D. Padua, editor, *Encyclopedia of Parallel Computing*, pages 1920–1933. Springer, US, 2011. doi:10.1007/978-0-387-09766-4\_244.
- [1797] Y. Pushak and H. H. Hoos. **Algorithm Configuration Landscapes: More Benign Than Expected?** In A. Auger, C. M. Fonseca, N. Lourenço, P. Machado, L. Paquete, and D. Whitley, editors, *Parallel Problem Solving from Nature - PPSN XV*, volume 11101 of *Lecture Notes in Computer Science*, pages 271–283. Springer, Cham, 2018. doi:10.1007/978-3-319-99259-4\_22.
- [1798] L. Rachmawati and D. Srinivasan. **Preference incorporation in multiobjective evolutionary algorithms: A survey**. In *Proceedings of the 2006 Congress on Evolutionary Computation (CEC 2006)*, pages 3385–3391. IEEE Press, Piscataway, NJ, July 2006.
- [1799] S. F. Rad, R. Ruiz, and N. Boroojerdian. **New High Performing Heuristics for Minimizing Makespan in Permutation Flowshops**. *Omega*, 37(2):331–345, 2009.
- [1800] A. Radulescu, M. López-Ibáñez, and T. Stützle. **Automatically Improving the Anytime Behaviour of Multiobjective Evolutionary Algorithms**. Technical Report TR/IRIDIA/2012-019, IRIDIA, Université Libre de Bruxelles, Belgium, 2012. Published in the proceedings of EMO 2013 [1801].
- [1801] A. Radulescu, M. López-Ibáñez, and T. Stützle. **Automatically Improving the Anytime Behaviour of Multiobjective Evolutionary Algorithms**. In R. C. Purshouse, P. J. Fleming, C. M. Fonseca, S. Greco, and J. Shaw, editors, *Evolutionary Multi-criterion Optimization, EMO 2013*, volume 7811 of *Lecture Notes in Computer Science*, pages 825–840. Springer, Heidelberg, Germany, 2013. ISBN 978-3-642-37139-4. doi:10.1007/978-3-642-37140-0\_61.

- [1802] G. R. Raidl and J. Gottlieb, editors. *Proceedings of EvoCOP 2003 – 3rd European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 2611 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2003.
- [1803] G. R. Raidl and J. Gottlieb, editors. *Proceedings of EvoCOP 2005 – 5th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 3448 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2005.
- [1804] G. R. Raidl et al., editors. *Applications of Evolutionary Computing, Proceedings of EvoWorkshops 2004*, volume 3005 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2004.
- [1805] C. Rajendran. **Heuristic algorithm for scheduling in a flowshop to minimize total flowtime**. *International Journal of Production Economics*, 29(1):65–73, 1993.
- [1806] C. Rajendran and H. Ziegler. **An efficient heuristic for scheduling in a flowshop to minimize total weighted flowtime of jobs**. *European Journal of Operational Research*, 103(1):129–138, 1997. ISSN 0377 – 2217. doi:[10.1016/S0377-2217\(96\)00273-1](https://doi.org/10.1016/S0377-2217(96)00273-1).
- [1807] C. Rajendran and H. Ziegler. **Ant-colony algorithms for permutation flowshop scheduling to minimize makespan/total flowtime of jobs**. *European Journal of Operational Research*, 155(2):426–438, 2004.
- [1808] C. Ram, G. Montibeller, and A. Morton. **Extending the use of scenario planning and MCDA for the evaluation of strategic options**. *Journal of the Operational Research Society*, 62(5):817–829, 2011.
- [1809] R. Ramakrishnan, S. J. Stolfo, R. J. Bayardo, and I. Parsa, editors. *Proceedings of the sixth ACM SIGKDD international conference on Knowledge discovery and data mining, Boston, MA, USA, August 20-23, 2000*. ACM Press, New York, NY, 2000.  
Annotation: <http://dl.acm.org/citation.cfm?id=347090>.
- [1810] M. Randall. **Near Parameter Free Ant Colony Optimisation**. In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 4th International Workshop, ANTS 2004*, volume 3172 of *Lecture Notes in Computer Science*, pages 374–381. Springer, Heidelberg, Germany, 2004.
- [1811] M. Randall and J. Montgomery. **Candidate Set Strategies for Ant Colony Optimisation**. In M. Dorigo et al., editors, *Ant Algorithms, Third International Workshop, ANTS 2002*, volume 2463 of *Lecture Notes in Computer Science*, pages 243–249. Springer, Heidelberg, Germany, 2002.
- [1812] M. Randall, H. A. Abbass, and J. Wiles, editors. *Progress in Artificial Life, Third Australian Conference, ACAL 2007*, volume 4828 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2007.
- [1813] Z. Rao and E. Salomons. **Development of a real-time, near-optimal control process for water-distribution networks**. *Journal of Hydroinformatics*, 9(1):25–37, 2007. doi:[10.2166/hydro.2006.015](https://doi.org/10.2166/hydro.2006.015).
- [1814] Z. Rao, J. Wicks, and S. West. **ENCOMS - An Energy Cost Minimisation System for Real-Time, Operational Control of Water Distribution Networks**. In D. A. Savic, G. A. Walters, R. King, and S. Thiam-Khu, editors, *Proceedings of the Eighth International Conference on Computing and Control for the Water Industry (CCWI 2005)*, volume 1, pages 85–90, University of Exeter, UK, Sept. 2005.

- [1815] M. Rappa, P. Jones, J. Freire, and S. Chakrabarti, editors. *World Wide Web Conference, WWW 2010, Proceedings, Raleigh, North Carolina, USA, April 26-30, 2010*. ACM Press, New York, NY, 2010.
- [1816] R. L. Rardin and R. Uzsoy. **Experimental Evaluation of Heuristic Optimization Algorithms: A Tutorial**. *Journal of Heuristics*, 7(3):261–304, 2001.
- [1817] J. Rasku, N. Musliu, and T. Kärkkäinen. **Automating the Parameter Selection in VRP: An Off-line Parameter Tuning Tool Comparison**. In W. Fitzgibbon, Y. A. Kuznetsov, P. Neittaanmäki, and O. Pironneau, editors, *Modeling, Simulation and Optimization for Science and Technology*, volume 34 of *Computational Methods in Applied Sciences*, pages 191–209. Springer, Netherlands, 2014. doi:[10.1007/978-94-017-9054-3\\_11](https://doi.org/10.1007/978-94-017-9054-3_11).  
*Keywords:* irace.
- [1818] C. E. Rasmussen and C. K. I. Williams. *Gaussian Processes for Machine Learning*. MIT Press, 2006.
- [1819] G. Rawlins, editor. *Foundations of Genetic Algorithms*. Morgan Kaufmann Publishers, San Mateo, CA, 1991.
- [1820] N. Rayner. **Maverick Research: Judgment Day, or Why We Should Let Machines Automate Decision Making**. Gartner research note, Gartner, Inc, Oct. 2011.
- [1821] R Development Core Team. *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing, Vienna, Austria, 2008. URL <http://www.R-project.org>.
- [1822] I. Rechenberg. *Evolutionsstrategie: Optimierung technischer Systeme nach Prinzipien der biologischen Evolution*. PhD thesis, Department of Process Engineering, Technical University of Berlin, 1971.
- [1823] I. Rechenberg. *Evolutionsstrategie: Optimierung technischer Systeme nach Prinzipien der biologischen Evolution*. Frommann-Holzboog, Stuttgart, Germany, 1973.
- [1824] I. Rechenberg. **Case studies in evolutionary experimentation and computation**. *Computer Methods in Applied Mechanics and Engineering*, 186(2-4):125–140, 2000. doi:[10.1016/S0045-7825\(99\)00381-3](https://doi.org/10.1016/S0045-7825(99)00381-3).
- [1825] P. M. Reed. **Many-Objective Visual Analytics: Rethinking the Design of Complex Engineered Systems**. In R. C. Purshouse, P. J. Fleming, C. M. Fonseca, S. Greco, and J. Shaw, editors, *Evolutionary Multi-criterion Optimization, EMO 2013*, volume 7811 of *Lecture Notes in Computer Science*, pages 1–1. Springer, Heidelberg, Germany, 2013. ISBN 978-3-642-37139-4.
- [1826] P. M. Reed, D. Hadka, J. D. Herman, J. R. Kasprzyk, and J. B. Kollat. **Evolutionary multiobjective optimization in water resources: The past, present, and future**. *Advances in Water Resources*, 51:438–456, 2013.
- [1827] C. R. Reeves. **Genetic algorithms**. In M. Gendreau and J.-Y. Potvin, editors, *Handbook of Metaheuristics*, volume 146 of *International Series in Operations Research & Management Science*, chapter 5, pages 109–140. Springer, New York, NY, 2 edition, 2010.

- [1828] C. R. Reeves and A. V. Eremeev. **Statistical analysis of local search landscapes.** *Journal of the Operational Research Society*, 55(7):687–693, 2004.
- [1829] M. Reimann. **Guiding ACO by Problem Relaxation: A Case Study on the Symmetric TSP.** In T. Bartz-Beielstein, M. J. Blesa, C. Blum, B. Naujoks, A. Roli, G. Rudolph, and M. Sampels, editors, *Hybrid Metaheuristics*, volume 4771 of *Lecture Notes in Computer Science*, pages 45–56. Springer, Heidelberg, Germany, 2007.
- [1830] M. Reimann and M. Laumanns. **Savings based ant colony optimization for the capacitated minimum spanning tree problem.** *Computers & Operations Research*, 33(6):1794–1822, 2006. doi:10.1016/j.cor.2004.11.019.  
*Keywords:* Ant colony Optimization, Capacitated minimum spanning tree problem.
- [1831] M. Reimann, K. F. Doerner, and R. F. Hartl. **D-ants: Savings based ants divide and conquer the vehicle routing problems.** *Computers & Operations Research*, 31(4):563–591, 2004.
- [1832] G. Reinelt. **TSPLIB — A Traveling Salesman Problem Library.** *ORSA Journal on Computing*, 3(4):376–384, 1991.
- [1833] G. Reinelt. *The Traveling Salesman: Computational Solutions for TSP Applications*, volume 840 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 1994.
- [1834] G. Reinelt. **TSPLIB.** <http://www.iwr.uni-heidelberg.de/groups/comopt/software/TSPLIB95>, 1995. Version visited last on 15 June 2012.
- [1835] Z.-G. Ren, Z.-R. Feng, L.-J. Ke, and Z.-J. Zhang. **New Ideas for Applying Ant Colony Optimization to the Set Covering Problem.** *Computers & Industrial Engineering*, 58(4):774–784, 2010.
- [1836] M. G. C. Resende and J. Pinho de Souza, editors. *Proceedings of MIC 1997, the 2nd Metaheuristics International Conference, Sophia-Antipolis, France, July 21-24, 1997*, 1997.
- [1837] M. G. C. Resende and C. C. Ribeiro. **Greedy Randomized Adaptive Search Procedures.** In F. Glover and G. Kochenberger, editors, *Handbook of Metaheuristics*, pages 219–249. Kluwer Academic Publishers, Norwell, MA, 2002.
- [1838] M. G. C. Resende and C. C. Ribeiro. **Greedy Randomized Adaptive Search Procedures: Advances, Hybridizations, and Applications.** In M. Gendreau and J.-Y. Potvin, editors, *Handbook of Metaheuristics*, volume 146 of *International Series in Operations Research & Management Science*, pages 283–319. Springer, New York, NY, 2 edition, 2010.
- [1839] M. Reyes-Sierra and C. A. Coello Coello. **Multi-objective particle swarm optimizers: A survey of the state-of-the-art.** *International Journal of Computational Intelligence Research*, 2(3):287–308, 2006.
- [1840] C. W. Reynolds. **Flocks, Herds, and Schools: A Distributed Behavioral Model.** *ACM Computer Graphics*, 21(4):25–34, 1987.
- [1841] M. Riabacke, M. Danielson, L. Ekenberg, and A. Larsson. **A Prescriptive Approach for Eliciting Imprecise Weight Statements in an MCDA Process.** In F. Rossi and A. Tsoukiàs, editors, *Algorithmic Decision Theory, First International Conference*,



- ADT 2009*, volume 5783 of *Lecture Notes in Computer Science*, pages 168–179. Springer, Heidelberg, Germany, 2009.
- [1842] I. Ribas, R. Companys, and X. Tort-Martorell. **An iterated greedy algorithm for the flowshop scheduling problem with blocking**. *Omega*, 39(3):293 – 301, 2011.
- [1843] I. Ribas, R. Companys, and X. Tort-Martorell. **An Efficient Iterated Local Search Algorithm for the Total Tardiness Blocking Flow Shop Problem**. *International Journal of Production Research*, 51(17):5238–5252, 2013.
- [1844] C. C. Ribeiro and S. Urrutia. **Heuristics for the Mirrored Traveling Tournament Problem**. *European Journal of Operational Research*, 179(3):775–787, 2007.
- [1845] J. R. Rice. **The Algorithm Selection Problem**. *Advances in Computers*, 15:65–118, 1976.
- [1846] A. J. Richmond and J. E. Beasley. **An Iterative Construction Heuristic for the Ore Selection Problem**. *Journal of Heuristics*, 10(2):153–167, 2004.
- [1847] E. Ridge and D. Kudenko. **Tuning the Performance of the MMAS Heuristic**. In T. Stützle, M. Birattari, and H. H. Hoos, editors, *Engineering Stochastic Local Search Algorithms. Designing, Implementing and Analyzing Effective Heuristics. SLS 2007*, volume 4638 of *Lecture Notes in Computer Science*, pages 46–60. Springer, Heidelberg, Germany, 2007.
- [1848] E. Ridge and D. Kudenko. **Tuning an Algorithm Using Design of Experiments**. In T. Bartz-Beielstein, M. Chiarandini, L. Paquete, and M. Preuss, editors, *Experimental Methods for the Analysis of Optimization Algorithms*, pages 265–286. Springer, Berlin, Germany, 2010.
- [1849] M.-C. Riff and E. Montero. **A new algorithm for reducing metaheuristic design effort**. In *Proceedings of the 2013 Congress on Evolutionary Computation (CEC 2013)*, pages 3283–3290. IEEE Press, Piscataway, NJ, 2013. doi:10.1109/CEC.2013.6557972.
- [1850] J. C. Rivera, H. M. Afsar, and C. Prins. **A Multistart Iterated Local Search for the Multitrip Cumulative Capacitated Vehicle Routing Problem**. *Computational Optimization and Applications*, 61(1):159–187, 2015.
- [1851] C. P. Robert. **Simulation of truncated normal variables**. *Statistics and Computing*, 5(2):121–125, June 1995.
- [1852] T. Robič and B. Filipič. **DEMO: Differential Evolution for Multiobjective Optimization**. In C. A. Coello Coello, A. H. Aguirre, and E. Zitzler, editors, *Evolutionary Multi-criterion Optimization, EMO 2005*, volume 3410 of *Lecture Notes in Computer Science*, pages 520–533. Springer, Heidelberg, Germany, 2005.
- [1853] F. J. Rodríguez, C. Blum, M. Lozano, and C. García-Martínez. **Iterated Greedy Algorithms for the Maximal Covering Location Problem**. In J.-K. Hao and M. Middendorf, editors, *Proceedings of EvoCOP 2012 – 12th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 7245 of *Lecture Notes in Computer Science*, pages 172–181. Springer, Heidelberg, Germany, 2012.



- [1854] C. A. Rodríguez Villalobos and C. A. Coello Coello. **A new multi-objective evolutionary algorithm based on a performance assessment indicator**. In T. Soule and J. H. Moore, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2012*, pages 505–512. ACM Press, New York, NY, 2012.
- [1855] F. Romeo and A. Sangiovanni-Vincentelli. **A Theoretical Framework for Simulated Annealing**. *Algorithmica*, 6(1-6):302–345, 1991.
- [1856] D. S. Roos. **Bioinformatics—trying to swim in a sea of data**. *Science*, 291(5507):1260–1261, 2001.
- [1857] S. Ropke and D. Pisinger. **A Unified Heuristic for a Large Class of Vehicle Routing Problems with Backhauls**. *European Journal of Operational Research*, 171(3):750–775, 2006.
- [1858] S. Ropke and D. Pisinger. **An Adaptive Large Neighborhood Search Heuristic for the Pickup and Delivery Problem with Time Windows**. *Transportation Science*, 40(4):455–472, 2006.
- [1859] J. Rose, W. Klebsch, and J. Wolf. **Temperature measurement and equilibrium dynamics of simulated annealing placements**. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, 9(3):253–259, 1990.
- [1860] P. Ross. **Hyper-Heuristics**. In E. K. Burke and G. Kendall, editors, *Search Methodologies*, pages 529–556. Springer, Boston, MA, 2005. doi:10.1007/0-387-28356-0\_17.
- [1861] F. Rossi and A. Tsoukiàs, editors. *Algorithmic Decision Theory, First International Conference, ADT 2009, Venice, Italy, October 20-23, 2009*, volume 5783 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2009.
- [1862] L. A. Rossman. *EPANET User’s Guide*. Risk Reduction Engineering Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, USA, 1994.
- [1863] L. A. Rossman. **The EPANET Programmer’s Toolkit for Analysis of Water Distribution Systems**. In *Proceedings of the Annual Water Resources Planning and Management Conference*, Reston, USA, 1999. ASCE.
- [1864] L. A. Rossman. *EPANET 2 Users Manual*. U.S. Environmental Protection Agency, Cincinnati, USA, 2000.
- [1865] F. Rothlauf, editor. *Genetic and Evolutionary Computation Conference, GECCO 2009, Proceedings, Montreal, Québec, Canada, July 8-12, 2009*. ACM Press, New York, NY, 2009.
- [1866] F. Rothlauf, editor. *Genetic and Evolutionary Computation Conference, GECCO 2009, Proceedings, Montreal, Québec, Canada, July 8-12, 2009, Companion Material*. ACM Press, New York, NY, 2009.
- [1867] B. Roy. **Robustness in operational research and decision aiding: A multi-faceted issue**. *European Journal of Operational Research*, 200(3):629–638, 2010. doi:10.1016/j.ejor.2008.12.036. URL <http://www.sciencedirect.com/science/article/B6VCT-4VJ06GW-1/2/21c4eadd5f4aa90cba9294ffd07eff34>.

- [1868] F. Rubin. **An Iterative Technique for Printed Wire Routing**. In *DAC'74, Proceedings of the 11th Design Automation Workshop*, pages 308–313. IEEE Press, 1974.
- [1869] G. Rudolph and A. Agapie. **Convergence Properties of Some Multi-Objective Evolutionary Algorithms**. In *Proceedings of the 2000 Congress on Evolutionary Computation (CEC'00)*, volume 2, pages 1010–1016, Piscataway, NJ, July 2000. IEEE Press.
- [1870] G. Rudolph, O. Schütze, C. Grimme, C. Domínguez-Medina, and H. Trautmann. **Optimal averaged Hausdorff archives for bi-objective problems: theoretical and numerical results**. *Computational Optimization and Applications*, 64(2):589–618, 2016.
- [1871] G. Rudolph et al., editors. *Proceedings of PPSN-X, Tenth International Conference on Parallel Problem Solving from Nature*, volume 5199 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2008.
- [1872] R. Ruiz and C. Maroto. **A Comprehensive Review and Evaluation of Permutation Flowshop Heuristics**. *European Journal of Operational Research*, 165(2):479–494, 2005.
- [1873] R. Ruiz and T. Stützle. **A Simple and Effective Iterated Greedy Algorithm for the Permutation Flowshop Scheduling Problem**. *European Journal of Operational Research*, 177(3):2033–2049, 2007.
- [1874] R. Ruiz and T. Stützle. **An Iterated Greedy heuristic for the sequence dependent setup times flowshop problem with makespan and weighted tardiness objectives**. *European Journal of Operational Research*, 187(3):1143 – 1159, 2008.
- [1875] R. Ruiz, C. Maroto, and J. Alcaraz. **Two new robust genetic algorithms for the flowshop scheduling problem**. *Omega*, 34(5):461–476, 2006. doi:10.1016/j.omega.2004.12.006.
- [1876] R. Ruiz, E. Vallada, and C. Fernández-Martínez. **Scheduling in flowshops with no-idle machines**. In *Computational intelligence in flow shop and job shop scheduling*, pages 21–51. Springer, 2009.
- [1877] W. Ruml. **Incomplete Tree Search using Adaptive Probing**. In B. Nebel, editor, *Proceedings of the Seventeenth International Joint Conference on Artificial Intelligence (IJCAI-01)*, pages 235–241. IEEE Press, 2001.
- [1878] T. P. Runarsson, H.-G. Beyer, E. K. Burke, J.-J. Merelo, D. Whitley, and X. Yao, editors. *Proceedings of PPSN-IX, Ninth International Conference on Parallel Problem Solving from Nature*, volume 4193 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2006.
- [1879] R. A. Russell. **Hybrid Heuristics for the Vehicle Routing Problem with Time Windows**. *Transportation Science*, 29(2):156–166, 1995.
- [1880] J. Rust. **Structural estimation of Markov decision processes**. In *Handbook of Econometrics*, volume 4, pages 3081–3143. Elsevier, 1994. doi:10.1016/S1573-4412(05)80020-0.

- [1881] C. Ryan, editor. *Genetic and Evolutionary Computation Conference, GECCO 2008, Proceedings, Atlanta, Georgia, USA July 12-16, 2008*. ACM Press, New York, NY, 2008.
- [1882] N. R. Sabar, M. Ayob, G. Kendall, and R. Qu. **Grammatical Evolution Hyper-Heuristic for Combinatorial Optimization Problems**. *IEEE Transactions on Evolutionary Computation*, 17(6):840–861, 2013.
- [1883] N. R. Sabar, M. Ayob, G. Kendall, and R. Qu. **A Dynamic Multiarmed Bandit-Gene Expression Programming Hyper-Heuristic for Combinatorial Optimization Problems**. *IEEE Transactions on Cybernetics*, 45(2):217–228, 2015.
- [1884] N. R. Sabar, M. Ayob, G. Kendall, and R. Qu. **Automatic Design of a Hyper-Heuristic Framework With Gene Expression Programming for Combinatorial Optimization Problems**. *IEEE Transactions on Evolutionary Computation*, 19(3):309–325, 2015.
- [1885] P. J. Sadalage and M. Fowler. **NoSQL distilled**. *Addison Wesley Professional*, 2012.
- [1886] B. S. Saini, M. López-Ibáñez, and K. Miettinen. **Automatic Surrogate Modelling Technique Selection based on Features of Optimization Problems**. In M. López-Ibáñez, A. Auger, and T. Stützle, editors, *GECCO'19 Companion*. ACM Press, New York, NY, 2019. doi:10.1145/3319619.3326890.
- [1887] A. B. A. Sakarya and L. W. Mays. **Optimal Operation of Water Distribution Pumps Considering Water Quality**. *Journal of Water Resources Planning and Management, ASCE*, 126(4):210–220, July / Aug. 2000.
- [1888] A. B. A. Sakarya, F. E. Goldman, and L. W. Mays. **Models for the optimal scheduling of pumps to meet water quality**. In D. A. Savic and G. A. Walters, editors, *Water Industry Systems: Modelling and Optimization Applications*, volume 2, pages 379–391. Research Studies Press Ltd., Baldock, United Kingdom, 1999.
- [1889] Y. Sakurai, K. Takada, T. Kawabe, and S. Tsuruta. **A method to control parameters of evolutionary algorithms by using reinforcement learning**. In *2010 Sixth International Conference on Signal-Image Technology and Internet Based Systems*, pages 74–79. IEEE, 2010.
- [1890] M. Samà, P. Pellegrini, A. D’Ariano, J. Rodriguez, and D. Pacciarelli. **Ant colony optimization for the real-time train routing selection problem**. *Transportation Research Part B: Methodological*, 85:89–108, 2016. doi:10.1016/j.trb.2016.01.005.   
Keywords: irace.
- [1891] J. Sánchez, M. Galán, and E. Rubio. **Applying a traffic lights evolutionary optimization technique to a real case: “Las Ramblas” area in Santa Cruz de Tenerife**. *IEEE Transactions on Evolutionary Computation*, 12(1):25–40, 2008.   
Keywords: Cellular automata (CA), Combinatorial optimization, Genetic algorithms (GAs), Microscopic traffic simulator, Traffic lights optimization.
- [1892] J. J. Sánchez-Medina, M. J. Galán-Moreno, and E. Rubio-Royo. **Traffic Signal Optimization in “La Almozara” District in Saragossa Under Congestion Conditions, Using Genetic Algorithms, Traffic Microsimulation, and Cluster Computing**. *IEEE Transactions on Intelligent Transportation Systems*, 11(1):132–141, Mar. 2010. ISSN 1524-9050. doi:10.1109/TITS.2009.2034383.

*Keywords:* cellular automata;genetic algorithms;road traffic;road vehicles;traffic engineering computing;Beowulf cluster;La Almozara district;Saragossa;cellular automata;cluster computing;genetic algorithm;multiple-instruction multiple data;traffic light programming;traffic microsimulation;traffic signal optimization;urban traffic congestion;Cellular automata (CA);genetic algorithms (GAs);intelligent transportation systems;microsimulation;traffic congestion;traffic modeling.

- [1893] E. Sandgren. **Nonlinear integer and discrete programming in mechanical design optimization.** *Journal of Mechanical Design*, 112(2):223–229, 1990. doi:[10.1115/1.2912596](https://doi.org/10.1115/1.2912596).
- [1894] N. Sankary and A. Ostfeld. **Stochastic Scenario Evaluation in Evolutionary Algorithms Used for Robust Scenario-Based Optimization.** *Water Resources Research*, 54(4):2813–2833, 2018.
- [1895] T. J. Santner, B. J. Williams, and W. I. Notz. *The Design and Analysis of Computer Experiments*. Springer Verlag New York, 2003. doi:[10.1007/978-1-4757-3799-8](https://doi.org/10.1007/978-1-4757-3799-8).
- [1896] K. Sato, C. Young, and D. Patterson. **An in-depth look at Google’s first Tensor Processing Unit (TPU).** <https://cloud.google.com/blog/big-data/2017/05/an-in-depth-look-at-googles-first-tensor-processing-unit-tpu>, 2017.
- [1897] M. W. P. Savelsbergh. **Local search in routing problems with time windows.** *Annals of Operations Research*, 4(1):285–305, Dec. 1985. doi:[10.1007/BF02022044](https://doi.org/10.1007/BF02022044).
- [1898] D. A. Savic and G. A. Walters, editors. *Water Industry Systems: Modelling and Optimization Applications*, volume 2. Research Studies Press Ltd., Baldock, United Kingdom, 1999.
- [1899] D. A. Savic, G. A. Walters, and M. Schwab. **Multiobjective Genetic Algorithms for Pump Scheduling in Water Supply.** In D. Corne and J. L. Shapiro, editors, *Evolutionary Computing Workshop, AISB’97*, volume 1305 of *Lecture Notes in Computer Science*, pages 227–236. Heidelberg, Germany, 1997.
- [1900] D. A. Savic, G. A. Walters, R. King, and S. Thiam-Khu, editors. *Proceedings of the Eighth International Conference on Computing and Control for the Water Industry (CCWI 2005)*, volume 1, University of Exeter, UK, Sept. 2005.
- [1901] Y. Sawaragi, H. Nakayama, and T. Tanino. *Theory of multiobjective optimization*. Elsevier, 1985.
- [1902] D. K. Saxena, J. A. Duro, A. Tiwari, K. Deb, and Q. Zhang. **Objective reduction in many-objective optimization: Linear and nonlinear algorithms.** *IEEE Transactions on Evolutionary Computation*, 17(1):77–99, 2013.
- [1903] R. Schaefer, C. Cotta, J. Kolodziej, and G. Rudolph, editors. *Parallel Problem Solving from Nature, PPSN XI*, volume 6238 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2010.
- [1904] A. Schaerf. **Combining Local Search and Look-Ahead for Scheduling and Constraint Satisfaction Problems.** In M. E. Pollack, editor, *Proceedings of the Fifteenth International Joint Conference on Artificial Intelligence (IJCAI-97)*, volume 2, pages 1254–1259. Morgan Kaufmann Publishers, 1997.

- [1905] J. D. Schaffer. **Multiple Objective Optimization with Vector Evaluated Genetic Algorithms**. In J. J. Grefenstette, editor, *ICGA*, pages 93–100. Lawrence Erlbaum Associates, 1985. ISBN 0-8058-0426-9.  
*Keywords:* VEGA.
- [1906] J. D. Schaffer, editor. *Proceedings of the 3rd International Conference on Genetic Algorithms, George Mason University, Fairfax, Virginia, USA, June 1989*. Morgan Kaufmann Publishers, San Mateo, CA, 1989.
- [1907] J. C. Schank and T. J. Koehnle. **Pseudoreplication is a pseudoproblem**. *Journal of Comparative Psychology*, 123(4):421–433, 2009.
- [1908] H. Scheffe. *The Analysis of Variance*. John Wiley & Sons, New York, NY, 1st edition, 1959.
- [1909] T. Schiavinotto and T. Stützle. **The Linear Ordering Problem: Instances, Search Space Analysis and Algorithms**. *Journal of Mathematical Modelling and Algorithms*, 3(4):367–402, 2004.
- [1910] T. Schiavinotto and T. Stützle. **A Review of Metrics on Permutations for Search Space Analysis**. *Computers & Operations Research*, 34(10):3143–3153, 2007.
- [1911] M. Schilde, K. F. Doerner, R. F. Hartl, and G. Kiechle. **Metaheuristics for the bi-objective orienteering problem**. *Swarm Intelligence*, 3(3):179–201, 2009. doi:10.1007/s11721-009-0029-5.
- [1912] M. Schlüter, J. A. Egea, and J. R. Banga. **Extended ant colony optimization for non-convex mixed integer nonlinear programming**. *Computers & Operations Research*, 36(7):2217–2229, 2009. doi:10.1016/j.cor.2008.08.015.
- [1913] J. Schmee and G. J. Hahn. **A Simple Method for Regression Analysis with Censored Data**. *Technometrics*, 21(4):417–432, 1979. doi:10.2307/1268280.
- [1914] J. G. Schneider. **Exploiting model uncertainty estimates for safe dynamic control learning**. In M. Mozer, M. I. Jordan, and T. Petsche, editors, *Advances in Neural Information Processing Systems (NIPS 9)*, pages 1047–1053. MIT Press, 1996.
- [1915] M. Schneider and H. H. Hoos. **Quantifying Homogeneity of Instance Sets for Algorithm Configuration**. In Y. Hamadi and M. Schoenauer, editors, *Learning and Intelligent Optimization, 6th International Conference, LION 6*, volume 7219 of *Lecture Notes in Computer Science*, pages 190–204. Springer, Heidelberg, Germany, 2012. doi:10.1007/978-3-642-34413-8\_14.  
*Keywords:* Quantifying Homogeneity; Empirical Analysis; Parameter Optimization; Algorithm Configuration.
- [1916] M. Schoenauer et al., editors. *Proceedings of PPSN-VI, Sixth International Conference on Parallel Problem Solving from Nature*, volume 1917 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2000.
- [1917] M. Schonlau, W. J. Welch, and D. R. Jones. **Global versus Local Search in Constrained Optimization of Computer Models**. *Lecture Notes-Monograph Series*, 34:11–25, 1998. doi:10.2307/4356058.



- [1918] G. R. Schreiber and O. Martin. **Cut Size Statistics of Graph Bisection Heuristics**. *SIAM Journal on Optimization*, 10(1):231–251, 1999.
- [1919] T. Schrijvers, G. Tack, P. Wuille, H. Samulowitz, and P. J. Stuckey. **Search Combinators**. *Constraints*, 18(2):269–305, 2013.
- [1920] G. Schrimpf, J. Schneider, H. Stamm-Wilbrandt, and G. Dueck. **Record Breaking Optimization Results Using the Ruin and Recreate Principle**. *Journal of Computational Physics*, 159(2):139–171, 2000.
- [1921] F. Schroff, D. Kalenichenko, and J. Philbin. **Facenet: A unified embedding for face recognition and clustering**. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, pages 815–823, 2015.
- [1922] C. Schulte, editor. *Principles and Practice of Constraint Programming – CP 2013, 19th International Conference, CP 2013, Uppsala, Sweden, September 16-20, 2013, Proceedings*, volume 8124 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2013. doi:10.1007/978-3-642-40627-0.
- [1923] O. Schütze, M. Laumanns, C. A. Coello Coello, M. Dellnitz, and E.-G. Talbi. **Convergence of stochastic search algorithms to finite size Pareto set approximations**. *Journal of Global Optimization*, 41(4):559–577, 2008.
- [1924] O. Schütze, X. Esquivel, A. Lara, and C. A. Coello Coello. **Some Comments on GD and IGD and Relations to the Hausdorff Distance**. In M. Pelikan and J. Branke, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2010*, pages 1971–1974. ACM Press, New York, NY, 2010.
- [1925] O. Schütze, M. Laumanns, E. Tantar, C. A. Coello Coello, and E.-G. Talbi. **Computing gap free Pareto front approximations with stochastic search algorithms**. *Evolutionary Computation*, 18(1):65–96, 2010.
- [1926] O. Schütze, A. Lara, and C. A. Coello Coello. **On the Influence of the Number of Objectives on the Hardness of a Multiobjective Optimization Problem**. *IEEE Transactions on Evolutionary Computation*, 15(4):444–455, 2011.
- [1927] O. Schütze, X. Esquivel, A. Lara, and C. A. Coello Coello. **Using the Averaged Hausdorff Distance as a Performance Measure in Evolutionary Multiobjective Optimization**. *IEEE Transactions on Evolutionary Computation*, 16(4):504–522, 2012.
- [1928] D. Schuurmans and M. P. Wellman, editors. *Proceedings of the Thirtieth AAAI Conference on Artificial Intelligence, AAAI 2016, February 12-17, 2016, Phoenix, Arizona, USA*. AAAI Press, 2016.
- [1929] H.-P. Schwefel. *Numerische Optimierung von Computer-Modellen mittels der Evolutionsstrategie*. Birkhäuser, Basel, Switzerland, 1977.
- [1930] H.-P. Schwefel and R. Männer, editors. *Proceedings of PPSN-I, First International Conference on Parallel Problem Solving from Nature*. Springer, Berlin, Heidelberg, 1991. doi:10.1007/BFb0029723.
- [1931] S. Scott and S. Matwin. **Feature engineering for text classification**. In *ICML*, volume 99, pages 379–388, 1999.

- [1932] H. Seada and K. Deb. **U-NSGA-III: A Unified Evolutionary Optimization Procedure for Single, Multiple, and Many Objectives: Proof-of-Principle Results.** In A. Gaspar-Cunha, C. H. Antunes, and C. A. Coello Coello, editors, *Evolutionary Multi-criterion Optimization, EMO 2015 Part I*, volume 9018 of *Lecture Notes in Computer Science*, pages 34–49. Springer, Heidelberg, Germany, 2015.
- [1933] J. Seipp, S. Sievers, M. Helmert, and F. Hutter. **Automatic Configuration of Sequential Planning Portfolios.** In B. Bonet and S. Koenig, editors, *AAAI*, pages 3364–3370. AAAI Press, 2015.
- [1934] P. Serafini. **Some Considerations About Computational Complexity for Multiobjective Combinatorial Problems.** In J. Jahn and W. Krabs, editors, *Recent Advances and Historical Development of Vector Optimization*, volume 294 of *Lecture Notes in Economics and Mathematical Systems*, pages 222–231. Springer, Berlin, Germany, 1986.
- [1935] P. Serafini. **Simulated annealing for multiple objective optimization problems.** In G. H. Tzeng and P. L. Yu, editors, *Proceedings of the 10th International Conference on Multiple Criteria Decision Making (MCDM'91)*, volume 1, pages 87–96. Springer Verlag, 1992.
- [1936] B. Shahriari, K. Swersky, Z. Wang, R. P. Adams, and N. de Freitas. **Taking the Human Out of the Loop: A Review of Bayesian Optimization.** *Proceedings of the IEEE*, 104(1):148–175, 2016.
- [1937] W. Shao, D. Pi, and Z. Shao. **Memetic algorithm with node and edge histogram for no-idle flow shop scheduling problem to minimize the makespan criterion.** *Applied Soft Computing*, 54:164–182, 2017.
- [1938] W. Shao, D. Pi, and Z. Shao. **A hybrid discrete teaching-learning based meta-heuristic for solving no-idle flow shop scheduling problem with total tardiness criterion.** *Computers & Operations Research*, 94:89–105, 2018.
- [1939] M. Sharma, M. López-Ibáñez, and D. Kazakov. **Performance Assessment of Recursive Probability Matching for Adaptive Operator Selection in Differential Evolution.** In A. Auger, C. M. Fonseca, N. Lourenço, P. Machado, L. Paquete, and D. Whitley, editors, *Parallel Problem Solving from Nature - PPSN XV*, volume 11102 of *Lecture Notes in Computer Science*, pages 321–333. Springer, Cham, 2018. doi:10.1007/978-3-319-99259-4\_26. Supplementary material: <https://github.com/mudita11/AOS-comparisons>.  
Keywords: Rec-PM.
- [1940] M. Sharma, M. López-Ibáñez, and D. Kazakov. **Performance Assessment of Recursive Probability Matching for Adaptive Operator Selection in Differential Evolution: Supplementary material.** <https://github.com/mudita11/AOS-comparisons>, 2018.
- [1941] M. Sharma, A. Komninos, M. López-Ibáñez, and D. Kazakov. **Deep Reinforcement Learning-Based Parameter Control in Differential Evolution.** In M. López-Ibáñez, A. Auger, and T. Stützle, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2019*. ACM Press, New York, NY, 2019. ISBN 978-1-4503-6111-8. doi:10.1145/3321707.3321813. Supplementary material: <https://dx.doi.org/10.5281/zenodo.2628228>.  
Keywords: DE-DDQN.

- [1942] M. Sharma, M. López-Ibáñez, and D. Kazakov. **Deep Reinforcement Learning Based Parameter Control in Differential Evolution: Supplementary material.** <https://github.com/mudita11/DE-DDQN>, 2019.
- [1943] B. Shavazipour. *Multi-Objective Optimisation under Deep Uncertainty*. PhD thesis, UCT Statistical sciences, South Africa, 2018.
- [1944] B. Shavazipour and T. J. Stewart. **Multi-objective optimisation under deep uncertainty.** *Operational Research*, Sept. 2019. doi:10.1007/s12351-019-00512-1.
- [1945] K. J. Shaw, C. M. Fonseca, A. L. Nortcliffe, M. Thompson, J. Love, and P. J. Fleming. **Assessing the performance of multiobjective genetic algorithms for optimization of a batch process scheduling problem.** In *Proceedings of the 1999 Congress on Evolutionary Computation (CEC 1999)*, volume 1, pages 34–75. IEEE Press, Piscataway, NJ, 1999.
- [1946] P. Shaw. **Using Constraint Programming and Local Search Methods to Solve Vehicle Routing Problems.** In M. Maher and J.-F. Puget, editors, *Principles and Practice of Constraint Programming, CP98*, volume 1520 of *Lecture Notes in Computer Science*, pages 417–431. Springer, Heidelberg, Germany, 1998.
- [1947] J. Shawe-Taylor, R. S. Zemel, P. L. Bartlett, F. Pereira, and K. Q. Weinberger, editors. *Advances in Neural Information Processing Systems 24: Annual Conference on Neural Information Processing Systems 2011*. Curran Associates, Red Hook, NY, 2011.
- [1948] D. J. Sheskin. *Handbook of Parametric and Nonparametric Statistical Procedures*. Chapman & Hall/CRC, second edition, 2000.
- [1949] D. J. Sheskin. *Handbook of Parametric and Nonparametric Statistical Procedures*. Chapman & Hall/CRC, fifth edition, 2011.
- [1950] Y. Shi and R. C. Eberhart. **Parameter selection in particle swarm optimization.** In V. W. Porto, N. Saravanan, D. Waagen, and A. E. Eiben, editors, *Evolutionary Programming VII*, volume 1447 of *Lecture Notes in Computer Science*, pages 591–600. Springer, Heidelberg, Germany, 1998. doi:10.1007/BFb0040753.
- [1951] Y. Shi, G. D. van Albada, J. Dongarra, and P. M. A. Sloot, editors. *Computational Science – ICCS 2007, 7th International Conference, Proceedings, Part IV*, volume 4490 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2007.
- [1952] M. D. Shields and J. Zhang. **The generalization of Latin hypercube sampling.** *Reliability Engineering & System Safety*, 148:96–108, 2016.
- [1953] B. Shipley. *Cause and Correlation in Biology: a User’s Guide to Path Analysis, Structural Equations and Causal Inference*. Cambridge University Press, 1st edition edition, 2000.
- [1954] O. M. Shir and T. Bäck. **Niching with derandomized evolution strategies in artificial and real-world landscapes.** *Natural Computing*, 8(1):171–196, 2009. doi:10.1007/s11047-007-9065-5.
- [1955] A. Shmygelska and H. H. Hoos. **An Ant Colony Optimisation Algorithm for the 2D and 3D Hydrophobic Polar Protein Folding Problem.** *BMC Bioinformatics*, 6:30, 2005. doi:10.1186/1471-2105-6-30.

- [1956] A. Shmygelska, R. Aguirre-Hernández, and H. H. Hoos. **An Ant Colony Optimization Algorithm for the 2D HP Protein Folding Problem**. In M. Dorigo et al., editors, *Ant Algorithms, Third International Workshop, ANTS 2002*, volume 2463 of *Lecture Notes in Computer Science*, pages 40–52. Springer, Heidelberg, Germany, 2002.
- [1957] H. E. Shrobe, T. M. Mitchell, and R. G. Smith, editors. *Proceedings of the 7th National Conference on Artificial Intelligence, St. Paul, MN, August 21-26, AAAI-88, 1988*. AAAI Press/MIT Press, Menlo Park, CA. URL <http://www.aaai.org/Conferences/AAAI/aaai88.php>.
- [1958] J. N. Siddall. *Optimal Engineering Design: Principles and Applications*. Marcel Dekker Inc., New York, 1982.
- [1959] S. Siegel and N. J. Castellan, Jr. *Non Parametric Statistics for the Behavioral Sciences*. McGraw Hill, New York, NY, 2 edition, 1988.
- [1960] R. Silhavy, R. Senkerik, Z. K. Oplatkova, P. Silhavy, and Z. Prokopova, editors. *Artificial Intelligence Perspectives in Intelligent Systems*, volume 464 of *Advances in Intelligent Systems and Computing*. Springer International Publishing, Switzerland, 2016.
- [1961] C. A. Silva, T. A. Runkler, J. M. Sousa, and R. Palm. **Ant Colonies as Logistic Processes Optimizers**. In M. Dorigo et al., editors, *Ant Algorithms, Third International Workshop, ANTS 2002*, volume 2463 of *Lecture Notes in Computer Science*, pages 76–87. Springer, Heidelberg, Germany, 2002.
- [1962] S. Silva and A. I. Esparcia-Alcázar, editors. *Genetic and Evolutionary Computation Conference, GECCO 2015, Proceedings, Madrid, Spain, July 11-15, 2015*. ACM Press, New York, NY, 2015.
- [1963] P. V. Silvestrin and M. Ritt. **An Iterated Tabu Search for the Multi-compartment Vehicle Routing Problem**. *Computers & Operations Research*, 81:192–202, 2017.
- [1964] K. Sim, E. Hart, and B. Paechter. **A Lifelong Learning Hyper-heuristic Method for Bin Packing**. *Evolutionary Computation*, 23(1):37–67, 2015. doi:10.1162/EVC0\_a\_00121.
- [1965] H. A. Simon. **A Behavioral Model of Rational Choice**. *The Quarterly Journal of Economics*, 69(1):99–118, 1955.
- [1966] O. Simonin, F. Charpillet, and E. Thierry. **Revisiting wavefront construction with collective agents: an approach to foraging**. *Swarm Intelligence*, 9(2):113–138, 2014. doi:10.1007/s11721-014-0093-3.  
Keywords: irace.
- [1967] A. R. Simpson, D. C. Sutton, D. S. Keane, and S. J. Sherriff. **Optimal control of pumping at a water filtration plant using genetic algorithms**. In D. A. Savic and G. A. Walters, editors, *Water Industry Systems: Modelling and Optimization Applications*, volume 2. Research Studies Press Ltd., Baldock, United Kingdom, 1999.
- [1968] M. Singer and M. L. Pinedo. **A Computational Study of Branch and Bound Techniques for Minimizing the Total Weighted Tardiness in Job Shops**. *IIE Transactions*, 30(2):109–118, 1998.

- [1969] S. P. Singh and S. Markovitch, editors. *Proceedings of the Thirty-First AAAI Conference on Artificial Intelligence, February 4-9, 2017, San Francisco, California, USA*. AAAI Press, Feb. 2017.
- [1970] A. Sioud and C. Gagné. **Enhanced migrating birds optimization algorithm for the permutation flow shop problem with sequence dependent setup times**. *European Journal of Operational Research*, 264(1):66–73, 2018.
- [1971] R. Słowiński. **Inducing preference models from pairwise comparisons: implications for preference-guided EMO**. Evolutionary Multi-Criterion Optimization, EMO 2011, 2011. Keynote talk.
- [1972] B. G. Small, B. W. McColl, R. Allmendinger, J. Pahle, G. López-Castejón, N. J. Rothwell, J. D. Knowles, P. Mendes, D. Brough, and D. B. Kell. **Efficient discovery of anti-inflammatory small-molecule combinations using evolutionary computing**. *Nature Chemical Biology*, 7(12):902–908, 2011.
- [1973] S. K. Smit and A. E. Eiben. **Comparing Parameter Tuning Methods for Evolutionary Algorithms**. In *Proceedings of the 2009 Congress on Evolutionary Computation (CEC 2009)*, pages 399–406. IEEE Press, Piscataway, NJ, 2009.
- [1974] S. K. Smit and A. E. Eiben. **Beating the ‘world champion’ evolutionary algorithm via REVAC tuning**. In H. Ishibuchi et al., editors, *Proceedings of the 2010 Congress on Evolutionary Computation (CEC 2010)*, pages 1–8. IEEE Press, Piscataway, NJ, 2010. doi:10.1109/CEC.2010.5586026.
- [1975] S. K. Smit and A. E. Eiben. **Parameter Tuning of Evolutionary Algorithms: Generalist vs. Specialist**. In C. D. Chio, S. Cagnoni, C. Cotta, M. Ebner, A. Ekárt, A. I. Esparcia-Alcázar, C. K. Goh, J.-J. Merelo, F. Neri, M. Preuss, J. Togelius, and G. N. Yannakakis, editors, *EvoApplications (1)*, volume 6024 of *Lecture Notes in Computer Science*, pages 542–551. Springer, Heidelberg, Germany, 2010. doi:10.1007/978-3-642-12239-2\_56.
- [1976] S. K. Smit and A. E. Eiben. **Multi-Problem Parameter Tuning using BONESA**. In *Proceedings of Artificial Evolution*, pages 222–233, 2011. ISBN 9782953926712. Annotation: This was not finally published in the LNCS of the proc. of EA.
- [1977] S. K. Smit, A. E. Eiben, and Z. Szlávik. **An MOEA-based Method to Tune EA Parameters on Multiple Objective Functions**. In J. Filipe and J. Kacprzyk, editors, *Proceedings of the International Joint Conference on Computational Intelligence (IJCCI-2010)*, pages 261–268. SciTePress, 2010.
- [1978] T. E. Smith and D. E. Setliff. **Knowledge-based constraint-driven software synthesis**. In *Proceedings of the Seventh Knowledge-Based Software Engineering Conference*, pages 18–27. IEEE, 1992. doi:10.1109/KBSE.1992.252912.
- [1979] K. Smith-Miles. **Cross-disciplinary Perspectives on Meta-learning for Algorithm Selection**. *ACM Computing Surveys*, 41(1):1–25, 2008.
- [1980] K. Smith-Miles and S. Bowly. **Generating New Test Instances by Evolving in Instance Space**. *Computers & Operations Research*, 63:102–113, 2015.
- [1981] G. W. Snedecor and W. G. Cochran. *Statistical Methods*. Iowa State University Press, Ames, IA, USA, 6th edition, 1967.



- [1982] J. Snoek, H. Larochelle, and R. P. Adams. **Practical Bayesian Optimization of Machine Learning Algorithms**. In P. L. Bartlett, F. C. N. Pereira, C. J. C. Burges, L. Bottou, and K. Q. Weinberger, editors, *Advances in Neural Information Processing Systems (NIPS 25)*, pages 2960–2968. Curran Associates, Red Hook, NY, 2012.
- [1983] J. Snoek, K. Swersky, R. Zemel, and R. P. Adams. **Input Warping for Bayesian Optimization of Non-Stationary Functions**. In E. P. Xing and T. Jebara, editors, *Proceedings of the 31th International Conference on Machine Learning*, volume 32, pages 1674–1682, 2014. URL <http://jmlr.org/proceedings/papers/v32/>.
- [1984] K. Socha. **ACO for Continuous and Mixed-Variable Optimization**. In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 4th International Workshop, ANTS 2004*, volume 3172 of *Lecture Notes in Computer Science*, pages 25–36. Springer, Heidelberg, Germany, 2004.
- [1985] K. Socha and C. Blum. **An ant colony optimization algorithm for continuous optimization: An application to feed-forward neural network training**. *Neural Computing & Applications*, 16(3):235–247, 2007.
- [1986] K. Socha and M. Dorigo. **Ant Colony Optimization for Mixed-Variable Optimization Problems**. Technical Report TR/IRIDIA/2007-019, IRIDIA, Université Libre de Bruxelles, Belgium, Oct. 2007.
- [1987] K. Socha and M. Dorigo. **Ant Colony Optimization for Continuous Domains**. *European Journal of Operational Research*, 185(3):1155–1173, 2008. doi:10.1016/j.ejor.2006.06.046.
- [1988] K. Socha, J. D. Knowles, and M. Sampels. **A MAX-MIN Ant System for the University Course Timetabling Problem**. In M. Dorigo et al., editors, *Ant Algorithms, Third International Workshop, ANTS 2002*, volume 2463 of *Lecture Notes in Computer Science*, pages 1–13. Springer, Heidelberg, Germany, 2002.
- [1989] K. Socha, M. Sampels, and M. Manfrin. **Ant algorithms for the university course timetabling problem with regard to the state-of-the-art**. In S. Cagnoni et al., editors, *Applications of Evolutionary Computing, Proceedings of EvoWorkshops 2003*, volume 2611 of *Lecture Notes in Computer Science*, pages 334–345. Springer, Heidelberg, Germany, 2003.
- [1990] M. L. Soffa and E. Duesterwald, editors. *Proceedings of the 6th Annual IEEE/ACM International Symposium on Code Generation and Optimization, CGO '08*, 2008. ACM Press, New York, NY.
- [1991] D. Soler, E. Martínez, and J. C. Micó. **A Transformation for the Mixed General Routing Problem with Turn Penalties**. *Journal of the Operational Research Society*, 59:540–547, 2008.
- [1992] C. Solnon. **Ants Can Solve Constraint Satisfaction Problems**. *IEEE Transactions on Evolutionary Computation*, 6(4):347–357, 2002.
- [1993] C. Solnon. *Ant Colony Optimization and Constraint Programming*. Wiley, 2010. doi:10.1002/9781118557563.
- [1994] M. M. Solomon. **Algorithms for the Vehicle Routing and Scheduling Problems with Time Windows**. *Operations Research*, 35:254–265, 1987.

- [1995] K. Sörensen. **Metaheuristics—the metaphor exposed**. *International Transactions in Operational Research*, 22(1):3–18, 2015. doi:[10.1111/itor.12001](https://doi.org/10.1111/itor.12001).
- [1996] K. Sörensen, M. Sevaux, and F. Glover. **A history of metaheuristics**. In R. Martí, P. M. Pardalos, and M. G. C. Resende, editors, *Handbook of Heuristics*, pages 1–27. Springer International Publishing, 2018. ISBN 978-3-319-07125-1.
- [1997] K. Sörensen, F. Arnold, and D. Palhazi Cuervo. **A critical analysis of the “improved Clarke and Wright savings algorithm”**. *International Transactions in Operational Research*, 26(1):54–63, 2019.
- [1998] J. A. Soria-Alcaraz, G. Ochoa, M. A. Sotelo-Figeroa, and E. K. Burke. **A Methodology for Determining an Effective Subset of Heuristics in Selection Hyper-heuristics**. *European Journal of Operational Research*, 260:972–983, 2017.
- [1999] A. Sotelo, J. Basulado, P. Doldán, and B. Barán. **Algoritmos Evolutivos Multiobjetivo Combinados para la Optimización de la Programación de Bombeo en Sistemas de Suministro de Agua**. In *Congreso Internacional de Tecnologías y Aplicaciones Informáticas, JIT-CITA 2001, Asunción, Paraguay*, 2001. (In Spanish).
- [2000] A. Sotelo, C. von Lücken, and B. Barán. **Multiobjective Evolutionary Algorithms in Pump Scheduling Optimisation**. In B. H. V. Topping and Z. Bittnar, editors, *Proceedings of the Third International Conference on Engineering Computational Technology*. Civil-Comp Press, Stirling, Scotland, 2002.
- [2001] A. Souilah. **Simulated annealing for manufacturing systems layout design**. *European Journal of Operational Research*, 82(3):592–614, 1995.
- [2002] T. Soule and J. H. Moore, editors. *Genetic and Evolutionary Computation Conference, GECCO 2012, Proceedings, Philadelphia, PA, USA, July 7-11, 2012*. ACM Press, New York, NY, 2012.
- [2003] T. Soule and J. H. Moore, editors. *Genetic and Evolutionary Computation Conference, GECCO 2012, Companion Material Proceedings, Philadelphia, PA, USA, July 7-11, 2012*. ACM Press, New York, NY, 2012.
- [2004] C. Spearman. **The proof and measurement of association between two things**. *The American journal of psychology*, 15(1):72–101, 1904.
- [2005] A. Sprecher, R. Kolisch, and A. Drexl. **Semi-active, active, and non-delay schedules for the resource-constrained project scheduling problem**. *European Journal of Operational Research*, 80(1):94–102, 1995. doi:[10.1016/0377-2217\(93\)E0294-8](https://doi.org/10.1016/0377-2217(93)E0294-8).  
*Keywords:* active schedules, Branch-and-bound methods, non-delay schedules, Resource-constrained project scheduling, Semi-active schedules.
- [2006] A. Sprecher, S. Hartmann, and A. Drexl. **An exact algorithm for project scheduling with multiple modes**. *OR Spektrum*, 19(3):195–203, 1997. doi:[10.1007/BF01545587](https://doi.org/10.1007/BF01545587).  
*Keywords:* branch-and-bound, multi-mode resource-constrained project scheduling, project scheduling.
- [2007] G. Squillero and P. Burelli, editors. *Applications of Evolutionary Computation: 19th European Conference, EvoApplications 2016, Porto, Portugal, March 30 – April 1, 2016, Proceedings, Part I*. Springer, Heidelberg, Germany, 2016.

- [2008] N. Srinivas and K. Deb. **Multiobjective Optimization Using Nondominated Sorting in Genetic Algorithms**. *Evolutionary Computation*, 2(3):221–248, 1994.
- [2009] S. Staab and R. Studer, editors. *Handbook on Ontologies*. International Handbooks on Information Systems. Springer, 2009.
- [2010] P. F. Stadler. **Toward a theory of landscapes**. In R. López-Peña, R. Capovilla, R. García-Pelayo, H. Waelbroeck, and F. Zertruche, editors, *Complex Systems and Binary Networks*, pages 77–163. Springer, 1995.
- [2011] F. Stefanello, V. Aggarwal, L. S. Buriol, J. F. Gonçalves, and M. G. C. Resende. **A Biased Random-key Genetic Algorithm for Placement of Virtual Machines Across Geo-Separated Data Centers**. In S. Silva and A. I. Esparcia-Alcázar, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2015*, pages 919–926, New York, NY, 2015. ACM Press. doi:10.1145/2739480.2754768.  
Keywords: irace.
- [2012] R. E. Steuer. *Multiple Criteria Optimization: Theory, Computation and Application*. Wiley Series in Probability and Mathematical Statistics. John Wiley & Sons, New York, NY, 1986.
- [2013] T. J. Stewart. **Robustness of Additive Value Function Methods in MCDM**. *Journal of Multi-Criteria Decision Analysis*, 5(4):301–309, 1996.  
Keywords: machine decision-making.
- [2014] T. J. Stewart. **Evaluation and refinement of aspiration-based methods in MCDM**. *European Journal of Operational Research*, 113(3):643–652, 1999.  
Keywords: machine decision-making.
- [2015] T. J. Stewart. **Goal programming and cognitive biases in decision-making**. *Journal of the Operational Research Society*, 56(10):1166–1175, 2005. doi:10.1057/palgrave.jors.2601948.  
Keywords: machine decision making.
- [2016] T. J. Stewart, S. French, and J. Rios. **Integrating multicriteria decision analysis and scenario planning: Review and extension**. *Omega*, 41(4):679–688, 2013. doi:10.1016/j.omega.2012.09.003.  
Keywords: Multicriteria decision analysis.
- [2017] D. H. Stolfi and E. Alba. **Red Swarm: Reducing travel times in smart cities by using bio-inspired algorithms**. *Applied Soft Computing*, 24:181–195, 2014. doi:10.1016/j.asoc.2014.07.014.  
Keywords: Evolutionary algorithm,Road traffic,Smart city,Smart mobility,Traffic light,WiFi connections.
- [2018] D. H. Stolfi and E. Alba. **An Evolutionary Algorithm to Generate Real Urban Traffic Flows**. In J. M. Puerta, J. A. Gámez, B. Dorronsoro, E. Barrenechea, A. Troncoso, B. Baroque, and M. Galar, editors, *Advances in Artificial Intelligence, CAEPIA 2015*, volume 9422 of *Lecture Notes in Computer Science*, pages 332–343. Springer, Heidelberg, Germany, 2015. doi:10.1007/978-3-319-24598-0\_30.  
Keywords: Evolutionary algorithm,SUMO,Smart city,Smart mobility,Traffic simulation.
- [2019] R. Storn and K. Price. **Differential Evolution – A Simple and Efficient Heuristic for Global Optimization over Continuous Spaces**. *Journal of Global Optimization*, 11(4):341–359, 1997.

- [2020] D. Straczuzzi et al., editors. *Proceedings of the Twenty-Eighth AAAI Conference on Artificial Intelligence, AAAI 2014, Québec City, Québec, Canada, July 27-31, 2014*, 2014. AAAI Press.
- [2021] P. N. Strenskei and S. Kirkpatrick. **Analysis of Finite Length Annealing Schedules.** *Algorithmica*, 6(1-6):346–366, 1991.
- [2022] T. Stützle. **MAX-MIN Ant System for the Quadratic Assignment Problem.** Technical Report AIDA-97-4, FG Intellektik, FB Informatik, TU Darmstadt, Germany, July 1997.
- [2023] T. Stützle. **Applying Iterated Local Search to the Permutation Flow Shop Problem.** Technical Report AIDA-98-04, FG Intellektik, FB Informatik, TU Darmstadt, Germany, Aug. 1998.
- [2024] T. Stützle. **An Ant Approach to the Flow Shop Problem.** In *Proceedings of the 6th European Congress on Intelligent Techniques & Soft Computing (EUFIT'98)*, volume 3, pages 1560–1564. Verlag Mainz, Aachen, Germany, 1998.
- [2025] T. Stützle. *Local Search Algorithms for Combinatorial Problems — Analysis, Improvements, and New Applications.* PhD thesis, FB Informatik, TU Darmstadt, Germany, 1998.
- [2026] T. Stützle. **ACOTSP: A Software Package of Various Ant Colony Optimization Algorithms Applied to the Symmetric Traveling Salesman Problem**, 2002. URL <http://www.aco-metaheuristic.org/aco-code/>.  
Annotation: <http://www.aco-metaheuristic.org/aco-code/>.
- [2027] T. Stützle. **Iterated Local Search for the Quadratic Assignment Problem.** *European Journal of Operational Research*, 174(3):1519–1539, 2006.
- [2028] T. Stützle, editor. *Third International Conference, LION 3, Trento, Italy, January 14-18, 2009. Selected Papers*, volume 5851 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2009.
- [2029] T. Stützle. **Some Thoughts on Engineering Stochastic Local Search Algorithms.** In A. Viana et al., editors, *Proceedings of the EU/MEeting 2009: Debating the future: new areas of application and innovative approaches*, pages 47–52, 2009.
- [2030] T. Stützle and M. Dorigo. **ACO Algorithms for the Quadratic Assignment Problem.** In D. Corne, M. Dorigo, and F. Glover, editors, *New Ideas in Optimization*, pages 33–50. McGraw Hill, London, UK, 1999.
- [2031] T. Stützle and M. Dorigo. **A Short Convergence Proof for a Class of ACO Algorithms.** *IEEE Transactions on Evolutionary Computation*, 6(4):358–365, 2002.
- [2032] T. Stützle and H. H. Hoos. **Improving the Ant System: A Detailed Report on the MAX-MIN Ant System.** Technical Report AIDA-96-12, FG Intellektik, FB Informatik, TU Darmstadt, Germany, Aug. 1996.
- [2033] T. Stützle and H. H. Hoos. **The MAX-MIN Ant System and Local Search for the Traveling Salesman Problem.** In T. Bäck, Z. Michalewicz, and X. Yao, editors, *Proceedings of the 1997 IEEE International Conference on Evolutionary Computation (ICEC'97)*, pages 309–314. IEEE Press, Piscataway, NJ, 1997.

- [2034] T. Stützle and H. H. Hoos. **MAX-MIN Ant System and Local Search for Combinatorial Optimization Problems**. In S. Voß, S. Martello, I. H. Osman, and C. Roucairol, editors, *Meta-Heuristics: Advances and Trends in Local Search Paradigms for Optimization*, pages 137–154. Kluwer Academic Publishers, Dordrecht, The Netherlands, 1999.
- [2035] T. Stützle and H. H. Hoos. **MAX-MIN Ant System**. *Future Generation Computer Systems*, 16(8):889–914, 2000.
- [2036] T. Stützle and H. H. Hoos. **Analysing the Run-time Behaviour of Iterated Local Search for the Travelling Salesman Problem**. In P. Hansen and C. Ribeiro, editors, *Essays and Surveys on Metaheuristics*, Operations Research/Computer Science Interfaces Series, pages 589–611. Kluwer Academic Publishers, Boston, MA, 2001.
- [2037] T. Stützle and M. López-Ibáñez. **Automatic (Offline) Configuration of Algorithms**. In J. L. J. Laredo, S. Silva, and A. I. Esparcia-Alcázar, editors, *GECCO (Companion)*, pages 681–702. ACM Press, New York, NY, 2015. doi:10.1145/2739482.2756581.
- [2038] T. Stützle and M. López-Ibáñez. **Automated Offline Design of Algorithms**. In P. A. N. Bosman, editor, *GECCO’17 Companion*, pages 1038–1065. ACM Press, New York, NY, 2017. doi:10.1145/3067695.3067722.
- [2039] T. Stützle and M. López-Ibáñez. **Automated Design of Metaheuristic Algorithms**. In M. Gendreau and J.-Y. Potvin, editors, *Handbook of Metaheuristics*, volume 272 of *International Series in Operations Research & Management Science*, pages 541–579. Springer, 2019. doi:10.1007/978-3-319-91086-4\_17.
- [2040] T. Stützle and R. Ruiz. **Iterated Greedy**. In R. Martí, P. M. Pardalos, and M. G. C. Resende, editors, *Handbook of Heuristics*, pages 1–31. Springer International Publishing, 2018. ISBN 978-3-319-07125-1. doi:10.1007/978-3-319-07153-4\_10-1.
- [2041] T. Stützle and R. Ruiz. **Iterated Local Search**. In R. Martí, P. M. Pardalos, and M. G. C. Resende, editors, *Handbook of Heuristics*, pages 1–27. Springer International Publishing, 2018. ISBN 978-3-319-07125-1. doi:10.1007/978-3-319-07153-4\_8-1.
- [2042] T. Stützle, M. Birattari, and H. H. Hoos, editors. *Engineering Stochastic Local Search Algorithms. Designing, Implementing and Analyzing Effective Heuristics. SLS 2007*, volume 4638 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2007.
- [2043] T. Stützle, M. Birattari, and H. H. Hoos, editors. *Engineering Stochastic Local Search Algorithms. Designing, Implementing and Analyzing Effective Heuristics. SLS 2009*, volume 5752 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2009.
- [2044] T. Stützle, M. López-Ibáñez, P. Pellegrini, M. Maur, M. A. Montes de Oca, M. Birattari, and M. Dorigo. **Parameter Adaptation in Ant Colony Optimization**. Technical Report TR/IRIDIA/2010-002, IRIDIA, Université Libre de Bruxelles, Belgium, Jan. 2010. Published as a book chapter [2046].
- [2045] T. Stützle, M. López-Ibáñez, and M. Dorigo. **A Concise Overview of Applications of Ant Colony Optimization**. In J. J. Cochran, editor, *Wiley Encyclopedia of Operations Research and Management Science*, volume 2, pages 896–911. John Wiley & Sons, 2011. doi:10.1002/9780470400531.eorms0001.



- [2046] T. Stützle, M. López-Ibáñez, P. Pellegrini, M. Maur, M. A. Montes de Oca, M. Birattari, and M. Dorigo. **Parameter Adaptation in Ant Colony Optimization**. In Y. Hamadi, E. Monfroy, and F. Saubion, editors, *Autonomous Search*, pages 191–215. Springer, Berlin, Germany, 2012. doi:10.1007/978-3-642-21434-9\_8.
- [2047] J. Styles and H. H. Hoos. **Ordered racing protocols for automatically configuring algorithms for scaling performance**. In C. Blum and E. Alba, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2013*, pages 551–558. ACM Press, New York, NY, 2013. doi:10.1145/2463372.2463438.
- [2048] J. Styles, H. H. Hoos, and M. Müller. **Automatically Configuring Algorithms for Scaling Performance**. In Y. Hamadi and M. Schoenauer, editors, *Learning and Intelligent Optimization, 6th International Conference, LION 6*, volume 7219 of *Lecture Notes in Computer Science*, pages 205–219. Springer, Heidelberg, Germany, 2012.
- [2049] A. Subramanian and M. Battarra. **An Iterated Local Search Algorithm for the Travelling Salesman Problem with Pickups and Deliveries**. *Journal of the Operational Research Society*, 64(3):402–409, 2013.
- [2050] A. Subramanian, M. Battarra, and C. N. Potts. **An Iterated Local Search Heuristic for the Single Machine Total Weighted Tardiness Scheduling Problem with Sequence-dependent Setup Times**. *International Journal of Production Research*, 52(9):2729–2742, 2014.
- [2051] P. N. Suganthan, N. Hansen, J. J. Liang, K. Deb, Y. P. Chen, A. Auger, and S. Tiwari. **Problem definitions and evaluation criteria for the CEC 2005 special session on real-parameter optimization**. Technical report, Nanyang Technological University, Singapore, 2005.  
*Keywords:* CEC’05 benchmark.  
*Annotation:* Also known as KanGAL Report Number 2005005 (Kanpur Genetic Algorithms Laboratory, IIT Kanpur).
- [2052] Y. Sui, A. Gotovos, J. W. Burdick, and A. Krause. **Safe Exploration for Optimization with Gaussian Processes**. In F. Bach and D. Blei, editors, *Proceedings of the 32nd International Conference on Machine Learning*, volume 37, pages 997–1005, 2015.  
*Keywords:* SafeOpt.
- [2053] Y. Sui, V. Zhuang, J. W. Burdick, and Y. Yue. **Stagewise Safe Bayesian Optimization with Gaussian Processes**. *Arxiv preprint arXiv:1806.07555*, 2018.  
*Keywords:* StageOpt.
- [2054] Z. Sun and M. Han. **Multi-criteria Decision Making Based on PROMETHEE Method**. In *Proceedings of the 2010 International Conference on Computing, Control and Industrial Engineering*, pages 416–418, Los Alamitos, CA, 2010. IEEE Computer Society Press.
- [2055] A. Suppapitnarm, K. A. Seffen, G. T. Parks, and P. J. Clarkson. **A simulated annealing algorithm for multiobjective optimization**. *Engineering Optimization*, 33(1):59–85, 2000.
- [2056] D. C. Sutton, D. S. Keane, and S. J. Sherriff. **Optimizing the Real Time Operation of a Pumping Station at a Water Filtration Plant using Genetic Algorithms**. Honors thesis, Department of Civil and Environmental Engineering, The University of Adelaide, 1998.

- [2057] R. S. Sutton and A. G. Barto. *Reinforcement Learning: An Introduction*. MIT Press, Cambridge, MA, 1998.
- [2058] R. S. Sutton and A. G. Barto. *Reinforcement Learning: An Introduction*. MIT Press, Cambridge, MA, 2nd edition, 2018.
- [2059] J. Swan, E. Özcan, and G. Kendall. **Hyperion - a recursive hyper-heuristic framework**. In C. A. Coello Coello, editor, *Learning and Intelligent Optimization, 5th International Conference, LION 5*, volume 6683 of *Lecture Notes in Computer Science*, pages 616–630. Springer, Heidelberg, Germany, 2011.
- [2060] J. Swan, J. R. Woodward, E. Özcan, G. Kendall, and E. K. Burke. **Searching the Hyper-heuristic Design Space**. *Cognitive Computation*, 6(1):66–73, Mar. 2014. doi:10.1007/s12559-013-9201-8.
- [2061] J. Swan et al. **A Research Agenda for Metaheuristic Standardization**. In E.-G. Talbi, editor, *Proceedings of MIC 2015, the 11th Metaheuristics International Conference*, 2015.
- [2062] W. R. Swartout, editor. *Proceedings of the 10th National Conference on Artificial Intelligence*, 1992. AAAI Press/MIT Press, Menlo Park, CA.
- [2063] G. Syswerda. **Uniform Crossover in Genetic Algorithms**. In J. D. Schaffer, editor, *Proc. of the Third Int. Conf. on Genetic Algorithms*, pages 2–9. Morgan Kaufmann Publishers, San Mateo, CA, 1989.  
*Keywords*: uniform crossover.
- [2064] H. Szu and R. Hartley. **Fast Simulated Annealing**. *Physics Letters A*, 122(3):157–162, 1987.
- [2065] K. Tagawa, H. Shimizu, and H. Nakamura. **Indicator-based Differential Evolution Using Exclusive Hypervolume Approximation and Parallelization for Multi-core Processors**. In N. Krasnogor and P. L. Lanzi, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2011*, pages 657–664. ACM Press, New York, NY, 2011.
- [2066] Y. Taigman, M. Yang, M. Ranzato, and L. Wolf. **Deepface: Closing the gap to human-level performance in face verification**. In *Proceedings of the IEEE conference on computer vision and pattern recognition*, pages 1701–1708, 2014.
- [2067] É. D. Taillard. **Some Efficient Heuristic Methods for the Flow Shop Sequencing Problem**. *European Journal of Operational Research*, 47(1):65–74, 1990.
- [2068] É. D. Taillard. **Robust Taboo Search for the Quadratic Assignment Problem**. *Parallel Computing*, 17(4-5):443–455, 1991.  
*Annotation*: faster 2-exchange delta evaluation in QAP.
- [2069] É. D. Taillard. **Benchmarks for Basic Scheduling Problems**. *European Journal of Operational Research*, 64(2):278–285, 1993.
- [2070] É. D. Taillard. **Comparison of Iterative Searches for the Quadratic Assignment Problem**. *Location Science*, 3(2):87–105, 1995.

- [2071] R. H. C. Takahashi et al., editors. *Evolutionary Multi-Criterion Optimization. 6th International Conference, EMO 2011*, volume 6576 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2011.
- [2072] E.-G. Talbi. **A Taxonomy of Hybrid Metaheuristics**. *Journal of Heuristics*, 8(5): 541–564, 2002.
- [2073] E.-G. Talbi, editor. *Hybrid Metaheuristics*, volume 434 of *Studies in Computational Intelligence*. Springer Verlag, 2013. URL <http://www.springer.com/engineering/computational+intelligence+and+complexity/book/978-3-642-30670-9>.
- [2074] E.-G. Talbi, editor. *Proceedings of MIC 2015, the 11th Metaheuristics International Conference*, 2015.
- [2075] E.-G. Talbi, P. Liardet, P. Collet, E. Lutton, and M. Schoenauer, editors. *Artificial Evolution: 7th International Conference, Evolution Artificielle, EA 2005, Lille, France*, volume 3871 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2005.
- [2076] K. Y. Tam. **A Simulated Annealing Algorithm for Allocating Space to Manufacturing Cells**. *International Journal of Production Research*, 30(1):63–87, 1992.
- [2077] R. Tanabe, H. Ishibuchi, and A. Oyama. **Benchmarking Multi- and Many-Objective Evolutionary Algorithms Under Two Optimization Scenarios**. *IEEE Access*, 5: 19597–19619, 2017.
- [2078] S. Tanaka and M. Araki. **An Exact Algorithm for the Single-machine Total Weighted Tardiness Problem with Sequence-dependent Setup Times**. *Computers & Operations Research*, 40(1):344–352, 2013.
- [2079] L. Tang and X. Wang. **Iterated local search algorithm based on very large-scale neighborhood for prize-collecting vehicle routing problem**. *International Journal of Advanced Manufacturing Technology*, 29(11):1246–1258, 2006.
- [2080] A. J. Tarquin and J. Dowdy. **Optimal pump operation in water distribution**. *Journal of Hydraulic Engineering, ASCE*, 115(2):158–169 or 496–501, Feb. 1989.
- [2081] M. F. Tasgetiren, Y.-C. Liang, M. Sevkli, and G. Gencyilmaz. **A particle swarm optimization algorithm for makespan and total flowtime minimization in the permutation flowshop sequencing problem**. *European Journal of Operational Research*, 177(3):1930 – 1947, 2007. doi:[10.1016/j.ejor.2005.12.024](https://doi.org/10.1016/j.ejor.2005.12.024).
- [2082] M. F. Tasgetiren, O. Buyukdagli, Q.-K. Pan, and P. N. Suganthan. **A general variable neighborhood search algorithm for the no-idle permutation flowshop scheduling problem**. In B. K. Panigrahi, P. N. Suganthan, S. Das, and S. S. Dash, editors, *Swarm, Evolutionary, and Memetic Computing*, volume 8298 of *Theoretical Computer Science and General Issues*, pages 24–34. Springer International Publishing, 2013.
- [2083] M. F. Tasgetiren, Q.-K. Pan, P. N. Suganthan, and O. Buyukdagli. **A variable iterated greedy algorithm with differential evolution for the no-idle permutation flowshop scheduling problem**. *Computers & Operations Research*, 40(7):1729–1743, 2013.

- [2084] M. F. Tasgetiren, D. Kizilay, Q.-K. Pan, and P. N. Suganthan. **Iterated Greedy Algorithms for the Blocking Flowshop Scheduling Problem with Makespan Criterion.** *Computers & Operations Research*, 77:111–126, 2017.
- [2085] J. Tavares and F. B. Pereira. **Automatic Design of Ant Algorithms with Grammatical Evolution.** In A. Moraglio, S. Silva, K. Krawiec, P. Machado, and C. Cotta, editors, *Proceedings of the 15th European Conference on Genetic Programming, EuroGP 2012*, volume 7244 of *Lecture Notes in Computer Science*, pages 206–217. Springer, Heidelberg, Germany, 2012.
- [2086] J. C. Tay and N. B. Ho. **Evolving dispatching rules using genetic programming for solving multi-objective flexible job-shop problems.** *Computers and Industrial Engineering*, 54(3):453 – 473, 2008. doi:[10.1016/j.cie.2007.08.008](https://doi.org/10.1016/j.cie.2007.08.008).
- [2087] C. Teixeira, J. Covas, T. Stützle, and A. Gaspar-Cunha. **Application of Pareto Local Search and Multi-Objective Ant Colony Algorithms to the Optimization of Co-Rotating Twin Screw Extruders.** In A. Viana et al., editors, *Proceedings of the EU/MEeting 2009: Debating the future: new areas of application and innovative approaches*, pages 115–120, 2009.
- [2088] C. Teixeira, J. Covas, T. Stützle, and A. Gaspar-Cunha. **Engineering an Efficient Two-Phase Local Search for the Co-Rotating Twin-Screw Configuration Problem.** *International Transactions in Operational Research*, 18(2):271–291, 2011.
- [2089] C. Teixeira, J. Covas, T. Stützle, and A. Gaspar-Cunha. **Multi-Objective Ant Colony Optimization for Solving the Twin-Screw Extrusion Configuration Problem.** *Engineering Optimization*, 44(3):351–371, 2012.
- [2090] C. Teixeira, J. Covas, T. Stützle, and A. Gaspar-Cunha. **Hybrid Algorithms for the Twin-Screw Extrusion Configuration Problem.** *Applied Soft Computing*, 23: 298–307, 2014.
- [2091] F. Teklu, A. Sumalee, and D. Watling. **A Genetic Algorithm Approach for Optimizing Traffic Control Signals Considering Routing.** *Computer-Aided Civil and Infrastructure Engineering*, 22(1):31–43, Jan. 2007. doi:[10.1111/j.1467-8667.2006.00468.x](https://doi.org/10.1111/j.1467-8667.2006.00468.x).
- [2092] J. B. Tenenbaum, V. D. Silva, and J. C. Langford. **A global geometric framework for nonlinear dimensionality reduction.** *Science*, 290(5500):2319–2323, 2000.
- [2093] J. Teo and H. A. Abbass. **Automatic generation of controllers for embodied legged organisms: A Pareto evolutionary multi-objective approach.** *Evolutionary Computation*, 12(3):355–394, 2004. doi:[10.1162/1063656041774974](https://doi.org/10.1162/1063656041774974).
- [2094] K. T. K. Teo, W. Y. Kow, and Y. K. Chin. **Optimization of traffic flow within an urban traffic light intersection with genetic algorithm.** In *Proceedings - 2nd International Conference on Computational Intelligence, Modelling and Simulation, CIMSIm 2010*, pages 172–177. IEEE, IEEE Press, 2010.  
*Keywords:* Genetic algorithm,T-junction,Traffic control system,Traffic flows.
- [2095] H. Terashima-Marín, P. Ross, and M. Valenzuela-Rendón. **Evolution of Constraint Satisfaction Strategies in Examination Timetabling.** In W. Banzhaf, J. M. Daida, A. E. Eiben, M. H. Garzon, V. Honavar, M. J. Jakiela, and R. E. Smith, editors,

- Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 1999*, pages 635–642. Morgan Kaufmann Publishers, San Francisco, CA, 1999.
- [2096] P. Thibodeau. **Machine-based decision-making is coming.** *Computer World*, Nov. 2011. URL [http://www.computerworld.com/s/article/359630/Machine\\_Based\\_Decision\\_Making\\_Is\\_Coming](http://www.computerworld.com/s/article/359630/Machine_Based_Decision_Making_Is_Coming). Last accessed: 15 January 2014.
- [2097] D. Thierens. **Population-based Iterated Local Search: Restricting the Neighborhood Search by Crossover.** In K. Deb et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2004, Part II*, volume 3103 of *Lecture Notes in Computer Science*, pages 234–245. Springer, Heidelberg, Germany, 2004.
- [2098] D. Thierens. **An Adaptive Pursuit Strategy for Allocating Operator Probabilities.** In H. Beyer and U. O’Reilly, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2005*, pages 1539–1546. ACM Press, New York, NY, 2005.
- [2099] D. Thierens. **Adaptive strategies for operator allocation.** In F. Lobo, C. F. Lima, and Z. Michalewicz, editors, *Parameter Setting in Evolutionary Algorithms*, pages 77–90. Springer, Berlin, Germany, 2007.
- [2100] D. Thierens. **Adaptive operator selection for iterated local search.** In T. Stützle, M. Birattari, and H. H. Hoos, editors, *Engineering Stochastic Local Search Algorithms. Designing, Implementing and Analyzing Effective Heuristics. SLS 2009*, volume 5752 of *Lecture Notes in Computer Science*, pages 140–144. Springer, Heidelberg, Germany, 2009.
- [2101] D. Thierens et al., editors. *Genetic and Evolutionary Computation Conference, GECCO 2007, Proceedings, London, England, UK, July 7-11, 2007*. ACM Press, New York, NY, 2007.
- [2102] C. Thornton, F. Hutter, H. H. Hoos, and K. Leyton-Brown. **Auto-WEKA: Combined Selection and Hyperparameter Optimization of Classification Algorithms.** In I. S. Dhillon, Y. Koren, R. Ghani, T. E. Senator, P. Bradley, R. Parekh, J. He, R. L. Grossman, and R. Uthrusamy, editors, *The 19th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, KDD 2013*, pages 847–855. ACM Press, New York, NY, 2013.
- [2103] T.-O. Ting, M. V. C. Rao, C. K. Loo, and S. S. Ngu. **Solving Unit Commitment Problem Using Hybrid Particle Swarm Optimization.** *Journal of Heuristics*, 9(6): 507–520, 2003. doi:10.1023/B:HEUR.0000012449.84567.1a.
- [2104] R. Tinós, D. Whitley, and G. Ochoa. **Generalized Asymmetric Partition Crossover (GAPX) for the Asymmetric TSP.** In C. Igel and D. V. Arnold, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2014*, pages 501–508. ACM Press, New York, NY, 2014.
- [2105] V. T’Kindt, N. Monmarché, F. Tercinet, and D. Laügt. **An ant colony optimization algorithm to solve a 2-machine bicriteria flowshop scheduling problem.** *European Journal of Operational Research*, 142(2):250–257, 2002.
- [2106] C. E. Torres, L. F. Rossi, J. Keffer, K. Li, and C.-C. Shen. **Modeling, analysis and simulation of ant-based network routing protocols.** *Swarm Intelligence*, 4(3):221–244, 2010.



- [2107] G. Toscano Pulido and C. A. Coello Coello. **The Micro Genetic Algorithm 2: Towards Online Adaptation in Evolutionary Multiobjective Optimization.** In C. M. Fonseca, P. J. Fleming, E. Zitzler, K. Deb, and L. Thiele, editors, *Evolutionary Multi-criterion Optimization, EMO 2003*, volume 2632 of *Lecture Notes in Computer Science*, pages 252–266. Springer, Heidelberg, Germany, 2003. doi:10.1007/3-540-36970-8\_18.
- [2108] F. Toyama, K. Shoji, H. Mori, and J. Miyamichi. **An Iterated Greedy Algorithm for the Binary Quadratic Programming Problem.** In *Joint 6th International Conference on Soft Computing and Intelligent Systems (SCIS) and 13th International Symposium on Advanced Intelligent Systems (ISIS), 2012*, pages 2183–2188. IEEE Press, 2012.
- [2109] H. Trautmann and J. Mehnen. **Preference-based Pareto optimization in certain and noisy environments.** *Engineering Optimization*, 41(1):23–38, Jan. 2009.
- [2110] H. Trautmann, O. Mersmann, and D. Arnu. *cmaes: Covariance Matrix Adapting Evolutionary Strategy*, 2011. URL <http://cran.r-project.org/package=cmaes>. R package.
- [2111] H. Trautmann, G. Rudolph, K. Klamroth, O. Schütze, M. M. Wiecek, Y. Jin, and C. Grimme, editors. *Evolutionary Multi-Criterion Optimization – 9th International Conference, EMO 2017, Münster, Germany, March 19 - 22, 2017. Proceedings.* Lecture Notes in Computer Science. Springer International Publishing, Cham, Switzerland, 2017.
- [2112] C. Treude and M. Wagner. **Predicting Good Configurations for GitHub and Stack Overflow Topic Models.** In *Proceedings of the 16th International Conference on Mining Software Repositories, MSR '19*, pages 84–95, Piscataway, NJ, USA, 2019. IEEE Press. doi:10.1109/MSR.2019.00022.  
*Keywords:* algorithm portfolio, corpus features, topic modelling.
- [2113] V. Trianni and M. López-Ibáñez. **Advantages of Multi-Objective Optimisation in Evolutionary Robotics: Survey and Case Studies.** Technical Report TR/IRIDIA/2014-014, IRIDIA, Université Libre de Bruxelles, Belgium, 2014. URL <http://iridia.ulb.ac.be/IridiaTrSeries/link/IridiaTr2014-014.pdf>.
- [2114] V. Trianni and M. López-Ibáñez. **Advantages of Task-Specific Multi-Objective Optimisation in Evolutionary Robotics.** *PLoS One*, 10(8):e0136406, 2015. doi:10.1371/journal.pone.0136406.
- [2115] V. Trianni and S. Nolfi. **Engineering the evolution of self-organizing behaviors in swarm robotics: A case study.** *Artificial Life*, 17(3):183–202, 2011.
- [2116] L.-Y. Tseng and Y.-T. Lin. **A hybrid genetic local search algorithm for the permutation flowshop scheduling problem.** *European Journal of Operational Research*, 198(1):84–92, 2009.
- [2117] S. Tsutsui. **An Enhanced Aggregation Pheromone System for Real-Parameter Optimization in the ACO Metaphor.** In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 5th International Workshop, ANTS 2006*, volume 4150 of *Lecture Notes in Computer Science*, pages 60–71. Springer, Heidelberg, Germany, 2006.

- [2118] S. Tsutsui. **cAS: Ant Colony Optimization with Cunning Ants**. In T. P. Runarsson, H.-G. Beyer, E. K. Burke, J.-J. Merelo, D. Whitley, and X. Yao, editors, *Proceedings of PPSN-IX, Ninth International Conference on Parallel Problem Solving from Nature*, volume 4193 of *Lecture Notes in Computer Science*, pages 162–171. Springer, Heidelberg, Germany, 2006.
- [2119] S. Tsutsui. **Ant Colony Optimization with Cunning Ants**. *Transactions of the Japanese Society for Artificial Intelligence*, 22:29–36, 2007. doi:[10.1527/tjsai.22.29](https://doi.org/10.1527/tjsai.22.29).  
*Keywords*: ant colony optimization, traveling salesman problem, cunning ant, donor ant, local search.
- [2120] E. R. Tufte. *The Visual Display of Quantitative Information*. Graphics Press, Cheshire, CT, 2nd edition, 2001. ISBN 0-9613921-4-2.  
*Keywords*: data visualization, information graphics, cognitive science.
- [2121] A. Tugilimana, A. P. Thrall, and R. Filomeno Coelho. **Conceptual Design of Modular Bridges Including Layout Optimization and Component Reusability**. *Journal of Bridge Engineering*, 22(11):04017094, 2017. doi:[10.1061/\(ASCE\)BE.1943-5592.0001138](https://doi.org/10.1061/(ASCE)BE.1943-5592.0001138).  
*Keywords*: scenario-based.
- [2122] M. Turchetta, F. Berkenkamp, and A. Krause. **Safe Exploration in Finite Markov Decision Processes with Gaussian Processes**. In D. D. Lee, M. Sugiyama, U. V. Luxburg, I. Guyon, and R. Garnett, editors, *Advances in Neural Information Processing Systems (NIPS 29)*, pages 4312–4320, 2016.  
*Keywords*: SafeMDP.
- [2123] T. Tušar. **Design of an Algorithm for Multiobjective Optimization with Differential Evolution**. M.sc. thesis, Faculty of Computer and Information Science, University of Ljubljana, 2007.
- [2124] T. Tušar and B. Filipič. **Differential Evolution versus Genetic Algorithms in Multiobjective Optimization**. In S. Obayashi et al., editors, *Evolutionary Multi-criterion Optimization, EMO 2007*, volume 4403 of *Lecture Notes in Computer Science*, pages 257–271. Springer, Heidelberg, Germany, 2007.
- [2125] T. Tušar and B. Filipič. **Visualizing Exact and Approximated 3D Empirical Attainment Functions**. *Mathematical Problems in Engineering*, 2014, 2014. Article ID 569346, 18 pages.
- [2126] T. Tušar and B. Filipič. **Visualization of Pareto front approximations in evolutionary multiobjective optimization: A critical review and the prosecution method**. *IEEE Transactions on Evolutionary Computation*, 19(2):225–245, 2015. doi:[10.1109/TEVC.2014.2313407](https://doi.org/10.1109/TEVC.2014.2313407).
- [2127] D. Tuytens, J. Teghem, P. Fortemps, and K. V. Nieuwenhuyze. **Performance of the MOSA Method for the Bicriteria Assignment Problem**. *Journal of Heuristics*, 6: 295–310, 2000.
- [2128] A. Tversky. **Choice by elimination**. *Journal of Mathematical Psychology*, 9(4):341–367, 1972.
- [2129] A. Tversky and D. Kahneman. **Judgment under uncertainty: Heuristics and biases**. *Science*, 185(4157):1124–1131, 1974.

- [2130] A. Tversky and D. Kahneman. **Loss aversion in riskless choice: a reference-dependent model.** *The Quarterly Journal of Economics*, 106(4):1039–1061, 1991.
- [2131] C. Twomey, T. Stützle, M. Dorigo, M. Manfrin, and M. Birattari. **An Analysis of Communication Policies for Homogeneous Multi-colony ACO Algorithms.** *Information Sciences*, 180(12):2390–2404, 2010. doi:10.1016/j.ins.2010.02.017.
- [2132] G. H. Tzeng and P. L. Yu, editors. *Proceedings of the 10th International Conference on Multiple Criteria Decision Making (MCDM’91)*. Springer Verlag, 1992.
- [2133] D. Uciniski, A. C. Atkinson, and M. Patan, editors. *mODa 10 – Advances in Model-Oriented Design and Analysis, Proceedings of the 10th International Workshop in Model-Oriented Design and Analysis Held in Łagów Lubuski, Poland, June 10-14, 2013*. Springer International Publishing, Heidelberg, 2013.
- [2134] N. L. J. Ulder, E. H. L. Aarts, H.-J. Bandelt, P. J. M. van Laarhoven, and E. Pesch. **Genetic Local Search Algorithms for the Travelling Salesman Problem.** In H.-P. Schwefel and R. Männer, editors, *Proceedings of PPSN-I, First International Conference on Parallel Problem Solving from Nature*, pages 109–116. Springer, Berlin, Heidelberg, 1991. doi:10.1007/BFb0029723.
- [2135] E. Ulungu and J. Teghem. **The two phases method: An efficient procedure to solve bi-objective combinatorial optimization problems.** *Foundations of Computing and Decision Sciences*, 20(2):149–165, 1995.
- [2136] E. Ulungu, J. Teghem, P. H. Fortemps, and D. Tuytens. **MOSA method: a tool for solving multiobjective combinatorial optimization problems.** *Journal of Multi-Criteria Decision Analysis*, 8(4):221–236, 1999.
- [2137] S. Urbanek. *multicore: Parallel Processing of R Code on Machines with Multiple Cores or CPUs*, 2010. URL <http://www.rforge.net/multicore/>. R package version 0.1-3.
- [2138] T. Urlings, R. Ruiz, and F. Sivrikaya-Şerifoğlu. **Genetic Algorithms for Complex Hybrid Flexible Flow Line Problems.** *International Journal of Metaheuristics*, 1(1):30–54, 2010.
- [2139] T. Urlings, R. Ruiz, and T. Stützle. **Shifting Representation Search for Hybrid Flexible Flowline Problems.** *European Journal of Operational Research*, 207(2):1086–1095, 2010. doi:10.1016/j.ejor.2010.05.041.
- [2140] R. J. M. Vaessens, E. H. L. Aarts, and J. K. Lenstra. **A Local Search Template.** *Computers & Operations Research*, 25(11):969–979, 1998. doi:10.1016/S0305-0548(97)00093-2.
- [2141] E. Vallada and R. Ruiz. **Genetic algorithms with path relinking for the minimum tardiness permutation flowshop problem.** *Omega*, 38(1–2):57–67, 2010. doi:10.1016/j.omega.2009.04.002.
- [2142] E. Vallada, R. Ruiz, and G. Minella. **Minimising total tardiness in the m-machine flowshop problem: A review and evaluation of heuristics and metaheuristics.** *Computers & Operations Research*, 35(4):1350–1373, 2008.

- [2143] E. Vallada, R. Ruiz, and J. M. Framiñán. **New hard benchmark for flowshop scheduling problems minimising makespan.** *European Journal of Operational Research*, 240(3):666–677, 2015. doi:[10.1016/j.ejor.2014.07.033](https://doi.org/10.1016/j.ejor.2014.07.033).
- [2144] M. Vallati, C. Fawcett, A. E. Gerevini, H. H. Hoos, and A. Saetti. **Generating Fast Domain-Optimized Planners by Automatically Configuring a Generic Parameterised Planner.** In E. Karpas, S. Jiménez Celorrio, and S. Kambhampati, editors, *Proceedings of ICAPS-PAL11*, 2011.
- [2145] A. Valsecchi, J. Dubois-Lacoste, T. Stützle, S. Damas, J. Santamaría, and L. Marrakchi-Kacem. **Evolutionary Medical Image Registration using Automatic Parameter Tuning.** In *Proceedings of the 2013 Congress on Evolutionary Computation (CEC 2013)*, pages 1326–1333. IEEE Press, Piscataway, NJ, 2013.
- [2146] H. van Hasselt, A. Guez, and D. Silver. **Deep Reinforcement Learning with Double Q-Learning.** In D. Schuurmans and M. P. Wellman, editors, *AAAI*. AAAI Press, 2016.
- [2147] J. I. van Hemert. **Evolving Combinatorial Problem Instances That Are Difficult to Solve.** *Evolutionary Computation*, 14(4):433–462, 2006. doi:[10.1162/evco.2006.14.4.433](https://doi.org/10.1162/evco.2006.14.4.433).
- [2148] P. van Hentenryck. *The OPL optimization programming language*. MIT Press, Cambridge, MA, 1999.
- [2149] P. van Hentenryck, editor. *Principles and Practice of Constraint Programming, CP 2002*. Lecture Notes in Computer Science. Springer, Heidelberg, Germany, 2002.
- [2150] P. van Hentenryck and L. D. Michel. *Constraint-based Local Search*. MIT Press, Cambridge, MA, 2005.
- [2151] P. van Hentenryck and L. D. Michel. **Synthesis of constraint-based local search algorithms from high-level models.** In R. C. Holte and A. Howe, editors, *Proc. of the Twenty-Second Conference on Artificial Intelligence (AAAI '07)*, pages 273–278. AAAI Press/MIT Press, Menlo Park, CA, 2007.
- [2152] P. J. M. van Laarhoven and E. H. L. Aarts. *Simulated Annealing: Theory and Applications*, volume 37. Springer, 1987.
- [2153] P. J. M. van Laarhoven, E. H. L. Aarts, and J. K. Lenstra. **Job Shop Scheduling by Simulated Annealing.** *Operations Research*, 40(1):113–125, 1992.
- [2154] S. van Rijn, H. Wang, M. van Leeuwen, and T. Bäck. **Evolving the structure of evolution strategies.** In X. Chen and A. Stafylopatis, editors, *Computational Intelligence (SSCI), 2016 IEEE Symposium Series on*, pages 1–8, 2016. *Keywords:* automated design, automatic configuration, cma-es.
- [2155] D. A. Van Veldhuizen and G. B. Lamont. **Evolutionary Computation and Convergence to a Pareto Front.** In J. R. Koza, editor, *Late Breaking Papers at the Genetic Programming 1998 Conference*, pages 221–228, Stanford University, California, July 1998. Stanford University Bookstore. *Keywords:* generational distance.
- [2156] D. A. Van Veldhuizen and G. B. Lamont. **Multiobjective Evolutionary Algorithms: Analyzing the State-of-the-art.** *Evolutionary Computation*, 8(2):125–147, 2000. doi:[10.1162/106365600568158](https://doi.org/10.1162/106365600568158).

- [2157] J. E. van Zyl. *A Methodology for Improved Operational Optimization of Water Distribution Systems*. PhD thesis, School of Engineering and Computer Science, University of Exeter, UK, 2001.
- [2158] J. E. van Zyl, D. A. Savic, and G. A. Walters. **Operational Optimization of Water Distribution Systems using a Hybrid Genetic Algorithm**. *Journal of Water Resources Planning and Management, ASCE*, 130(2):160–170, Mar. 2004.
- [2159] P. Vansteenwegen and M. Mateo. **An Iterated Local Search Algorithm for the Single-vehicle Cyclic Inventory Routing Problem**. *European Journal of Operational Research*, 237(3):802–813, 2014.
- [2160] P. Vansteenwegen, W. Souffriau, G. V. Berghe, and D. V. Oudheusden. **Iterated Local Search for the Team Orienteering Problem with Time Tindows**. *Computers & Operations Research*, 36(12):3281–3290, 2009.
- [2161] T. K. Varadharajan and C. Rajendran. **A multi-objective simulated-annealing algorithm for scheduling in flowshops to minimize the makespan and total flowtime of jobs**. *European Journal of Operational Research*, 167(3):772–795, 2005.
- [2162] F. J. Varela and P. Bourguine, editors. *Proceedings of the First European Conference on Artificial Life*, 1992. MIT Press, Cambridge, MA.
- [2163] A. Vargha and H. D. Delaney. **A critique and improvement of the CL common language effect size statistics of McGraw and Wong**. *Journal of Educational and Behavioral Statistics*, 25(2):101–132, 2000.  
*Keywords:* effect size test, A12 test.
- [2164] A. Vasan and S. P. Simonovic. **Optimization of Water Distribution Network Design Using Differential Evolution**. *Journal of Water Resources Planning and Management, ASCE*, 136(2):279–287, 2010.
- [2165] A. Vaswani, N. Shazeer, N. Parmar, J. Uszkoreit, L. Jones, A. N. Gomez, L. Kaiser, and I. Polosukhin. **Attention Is All You Need**. *Arxiv preprint arXiv:1706.03762*, 2017. URL <http://arxiv.org/abs/1706.03762>.
- [2166] P. H. Vaz Penna, A. Subramanian, and L. S. Ochi. **An Iterated Local Search Heuristic for the Heterogeneous Fleet Vehicle Routing Problem**. *Journal of Heuristics*, 19(2):201–232, 2013.
- [2167] J. A. Vázquez-Rodríguez and G. Ochoa. **On the Automatic Discovery of Variants of the NEH Procedure for Flow Shop Scheduling Using Genetic Programming**. *Journal of the Operational Research Society*, 62(2):381–396, 2010.
- [2168] V. Černý. **A Thermodynamical Approach to the Traveling Salesman Problem: An Efficient Simulation Algorithm**. *Journal of Optimization Theory and Applications*, 45(1):41–51, 1985.
- [2169] A. Vedaldi and B. Fulkerson. **VLFeat: An open and portable library of computer vision algorithms**. In *Proceedings of the 18th ACM international conference on Multimedia*, pages 1469–1472. ACM, 2010.
- [2170] M. M. Veloso, editor. *IJCAI 2007, Proceedings of the 20th International Joint Conference on Artificial Intelligence, Hyderabad, India, January 6-12, 2007*, 2007. AAAI Press, Menlo Park, CA.



- [2171] S. Verel, A. Liefooghe, and C. Dhaenens. **Set-based Multiobjective Fitness Landscapes: A Preliminary Study**. In N. Krasnogor and P. L. Lanzi, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2011*, pages 769–776. ACM Press, New York, NY, 2011. doi:10.1145/2001576.2001681.
- [2172] S. Verel, A. Liefooghe, L. Jourdan, and C. Dhaenens. **On the Structure of Multiobjective Combinatorial Search Space: MNK-landscapes with Correlated Objectives**. *European Journal of Operational Research*, 227(2):331–342, 2013. doi:10.1016/j.ejor.2012.12.019.
- [2173] A. Viana et al., editors. *Proceedings of the EU/MEeting 2009: Debating the future: new areas of application and innovative approaches*, 2009.
- [2174] P. Viappiani, B. Faltings, and P. Pu. **Preference-based Search using Example-Critiquing with Suggestions**. *Journal of Artificial Intelligence Research*, 27:465–503, 2006.
- [2175] P. Viappiani, P. Pu, and B. Faltings. **Preference-based Search with Adaptive Recommendations**. *AI Communications*, 21(2):155–175, 2008.
- [2176] R. V. V. Vidal, editor. *Applied Simulated Annealing*. Springer, 1993.
- [2177] T. Vidal, T. G. Crainic, M. Gendreau, and C. Prins. **Heuristics for Multi-attribute Vehicle Routing Problems: A Survey and Synthesis**. *European Journal of Operational Research*, 231(1):1–21, 2013.
- [2178] T. Vidal, T. G. Crainic, M. Gendreau, and C. Prins. **A Unified Solution Framework for Multi-attribute Vehicle Routing Problems**. *European Journal of Operational Research*, 234(3):658–673, 2014.
- [2179] A. Violin. *Mathematical Programming Approaches to Pricing Problems*. PhD thesis, Faculté de Sciences, Université Libre de Bruxelles and Dipartimento di Ingegneria e Architettura, Università degli studi di Trieste, 2014.  
*Annotation:* Supervised by Dr. Martine Labbé and Dr. Lorenzo Castelli.
- [2180] B. Vitoriano, E. Pinson, and F. Valente, editors. *ICORES 2014 - Proceedings of the 3rd International Conference on Operations Research and Enterprise Systems, Angers, Loire Valley, France*. SciTePress, 2014.
- [2181] H.-M. Voigt et al., editors. *The 4th International Conference on Parallel Problem Solving from Nature Berlin, Germany, September 22 - 26, 1996. Proceedings*, volume 1141 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 1996.
- [2182] C. von Lücken, B. Barán, and C. Brizuela. **A survey on multi-objective evolutionary algorithms for many-objective problems**. *Computational Optimization and Applications*, 58(3):707–756, 2014.
- [2183] S. Voß and D. L. Woodruff, editors. *Optimization Software Class Libraries*. Kluwer Academic Publishers, Boston, MA, 2002.
- [2184] T. Voß, N. Hansen, and C. Igel. **Improved Step Size Adaptation for the MO-CMA-ES**. In M. Pelikan and J. Branke, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2010*, pages 487–494. ACM Press, New York, NY, 2010.

- [2185] C. Voudouris and E. P. K. Tsang. **Guided Local Search and its Application to the Travelling Salesman Problem.** *European Journal of Operational Research*, 113 (2):469–499, 1999.
- [2186] C. Voudouris and E. P. K. Tsang. **Guided Local Search.** In F. Glover and G. Kochenberger, editors, *Handbook of Metaheuristics*, pages 185–218. Kluwer Academic Publishers, Norwell, MA, 2002.
- [2187] A. Wachi, Y. Sui, Y. Yue, and M. Ono. **Safe Exploration and Optimization of Constrained MDPs Using Gaussian Processes.** In S. A. McIlraith and K. Q. Weinberger, editors, *AAAI Conference on Artificial Intelligence*, pages 6548–6556. AAAI Press, Feb. 2018.  
*Keywords:* Markov Decision Process, Gaussian Processes.
- [2188] M. Wagner and F. Neumann. **A Fast Approximation-guided Evolutionary Multi-objective Algorithm.** In S. Silva and A. I. Esparcia-Alcázar, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2015*, pages 687–694. ACM Press, New York, NY, 2015.
- [2189] M. Wagner, T. Friedrich, and M. T. Lindauer. **Improving local search in a minimum vertex cover solver for classes of networks.** In *Proceedings of the 2017 Congress on Evolutionary Computation (CEC 2017)*, pages 1704–1711, Piscataway, NJ, 2017. IEEE Press. doi:10.1109/CEC.2017.7969507.  
*Keywords:* graph theory;search problems;local search;minimum vertex cover solver;network classes;straightforward alternative approach;benchmark sets;graphs;algorithm portfolio;single integrated approach;Training;Portfolios;Algorithm design and analysis;Prediction algorithms;Machine learning algorithms;Optimization;Benchmark testing;smac,paramils.
- [2190] T. Wagner, N. Beume, and B. Naujoks. **Pareto-, Aggregation-, and Indicator-Based Methods in Many-Objective Optimization.** In S. Obayashi et al., editors, *Evolutionary Multi-criterion Optimization, EMO 2007*, volume 4403 of *Lecture Notes in Computer Science*, pages 742–756. Springer, Heidelberg, Germany, 2007.
- [2191] B. W. Wah and Y. X. Chen. **Optimal Anytime Constrained Simulated Annealing for Constrained Global Optimization.** In R. Dechter, editor, *Principles and Practice of Constraint Programming, CP 2000*, volume 1894 of *Lecture Notes in Computer Science*, pages 425–440. Springer, Heidelberg, Germany, 2000. doi:10.1007/3-540-45349-0\_31.
- [2192] H. M. Wallach, H. Larochelle, A. Beygelzimer, F. d’Alché-Buc, E. B. Fox, and R. Garnett, editors. *Advances in Neural Information Processing Systems 32: Annual Conference on Neural Information Processing Systems 2019, NeurIPS 2019, 8-14 December 2019, Vancouver, BC, Canada*, 2019.
- [2193] J. Wallenius. **Comparative Evaluation of Some Interactive Approaches to Multicriterion Optimization.** *Management Science*, 21(12):1387–1396, 1975.
- [2194] J. P. Walser. **Solving Linear Pseudo-Boolean Constraint Problems with Local Search.** In B. Kuipers and B. L. Webber, editors, *Proceedings of AAAI 1997 – Fourteenth National Conference on Artificial Intelligence*, pages 269–274. AAAI Press/MIT Press, Menlo Park, CA, 1997.
- [2195] J. P. Walser. *Integer Optimization by Local Search: A Domain-Independent Approach*, volume 1637 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 1999.

- [2196] J. P. Walser, R. Iyer, and N. Venkatasubramanian. **An Integer Local Search Method with Application to Capacitated Production Planning**. In J. Mostow and C. Rich, editors, *Proceedings of AAAI 1998 – Fifteenth National Conference on Artificial Intelligence*, pages 373–379. AAAI Press/MIT Press, Menlo Park, CA, 1998.
- [2197] T. Walsh. **Depth-bounded Discrepancy Search**. In M. E. Pollack, editor, *Proceedings of the Fifteenth International Joint Conference on Artificial Intelligence (IJCAI-97)*, pages 1388–1395. Morgan Kaufmann Publishers, 1997.
- [2198] T. Walsh, editor. *IJCAI 2011, Proceedings of the 22nd International Joint Conference on Artificial Intelligence, Barcelona, Spain, July 16-22, 2011*, 2011. IJCAI/AAAI Press, Menlo Park, CA.
- [2199] C. Walshaw and M. Cross. **Mesh Partitioning: A Multilevel Balancing and Refinement Algorithm**. *SIAM Journal on Scientific Computing*, 22(1):63–80, 2000. doi:10.1137/S1064827598337373.
- [2200] T. M. Walski, D. V. Chase, D. A. Savic, W. Grayman, S. Beckwith, and E. Koelle. *Advanced Water Distribution Modeling and Management*. Haestad Methods, Inc., Haestad Press, first edition, 2003.
- [2201] C. Wang, C. Chu, and J.-M. Proth. **Heuristic Approaches for  $n/m/F/\Sigma C_i$  Scheduling Problems**. *European Journal of Operational Research*, 96(3):636–644, 1997. doi:10.1016/0377-2217(95)00347-9.
- [2202] H. Wang, J. Doherty, and Y. Jin. **Hierarchical surrogate-assisted evolutionary multi-scenario airfoil shape optimization**. In *Proceedings of the 2018 Congress on Evolutionary Computation (CEC 2018)*, pages 1–8, Piscataway, NJ, 2018. IEEE Press. Keywords: scenario-based.
- [2203] R. Wang, R. C. Purshouse, and P. J. Fleming. **Preference-Inspired Coevolutionary Algorithms for Many-Objective Optimization**. *IEEE Transactions on Evolutionary Computation*, 17(4):474–494, 2013.
- [2204] Y. Wang, Z. Lü, F. Glover, and J.-K. Hao. **Probabilistic GRASP-Tabu Search algorithms for the UBQP problem**. *Computers & Operations Research*, 40(12):3100–3107, 2013. doi:10.1016/j.cor.2011.12.006.
- [2205] Y. Wang, Z. Lü, F. Glover, and J.-K. Hao. **Backbone Guided Tabu Search for Solving the UBQP Problem**. *Journal of Heuristics*, 19(4):679–695, 2013. doi:10.1007/s10732-011-9164-4.
- [2206] Y. Wang, X. Dong, P. Chen, and Y. Lin. **Iterated local search algorithms for the sequence-dependent setup times flow shop scheduling problem minimizing makespan**. In *Foundations of Intelligent Systems*, pages 329–338. Springer, 2014.
- [2207] M. O. Ward. **Multivariate data glyphs: Principles and practice**. In *Handbook of data visualization*, pages 179–198. Springer, 2008.
- [2208] A. A. Watson and J. R. Kasprzyk. **Incorporating deeply uncertain factors into the many objective search process**. *Environmental Modelling & Software*, 89:159–171, 2017.

- [2209] J.-P. Watson, L. Barbulescu, D. Whitley, and A. E. Howe. **Contrasting Structured and Random Permutation Flow-Shop Scheduling Problems: Search Space Topology and Algorithm Performance.** *INFORMS Journal on Computing*, 14(2):98–123, 2002.
- [2210] J.-P. Watson, J. C. Beck, A. E. Howe, and D. Whitley. **Problem Difficulty for Tabu Search in Job-Shop Scheduling.** *Artificial Intelligence*, 143(2):189–217, 2003.
- [2211] WCCI. *Proceedings of the First IEEE Conference on Evolutionary Computation, IEEE World Congress on Computational Intelligence, Orlando, Florida, USA, June 27-29, 1994*, Piscataway, NJ, June 1994. IEEE Press.
- [2212] C. Wegley, M. Eusuff, and K. E. Lansey. **Determining Pump Operations Using Particle Swarm Optimization.** In R. H. Hotchkiss and M. Glade, editors, *Building Partnerships, Proceedings of the Joint Conference on Water Resources Engineering and Water Resources Planning and Management*, Minneapolis, USA, 2000.
- [2213] E. J. Wegman. **Hyperdimensional data analysis using parallel coordinates.** *Journal of the American Statistical Association*, 85(411):664–675, 1990.
- [2214] B. L. Welch. **The significance of the difference between two means when the population variances are unequal.** *Biometrika*, 29(3/4):350–362, 1938.
- [2215] S. Wessing and M. López-Ibáñez. **Latin Hypercube Designs with Branching and Nested Factors for Initialization of Automatic Algorithm Configuration.** *Evolutionary Computation*, 27(1):129–145, 2018. doi:10.1162/evco\_a\_00241.
- [2216] S. Wessing, N. Beume, G. Rudolph, and B. Naujoks. **Parameter Tuning Boosts Performance of Variation Operators in Multiobjective Optimization.** In R. Schaefer, C. Cotta, J. Kolodziej, and G. Rudolph, editors, *Parallel Problem Solving from Nature, PPSN XI*, volume 6238 of *Lecture Notes in Computer Science*, pages 728–737. Springer, Heidelberg, Germany, 2010. doi:10.1007/978-3-642-15844-5\_73.
- [2217] D. Weyland. **A Rigorous Analysis of the Harmony Search Algorithm: How the Research Community can be misled by a “novel” Methodology.** *International Journal of Applied Metaheuristic Computing*, 12(2):50–60, 2010.
- [2218] D. Weyland. **A critical analysis of the harmony search algorithm: How not to solve Sudoku.** *Operations Research Perspectives*, 2:97–105, 2015.
- [2219] C. R. Whaley. **ATLAS: Automatically Tuned Linear Algebra Software.** In D. Padua, editor, *Encyclopedia of Parallel Computing*, pages 95–101. Springer, US, 2011. doi:10.1007/978-0-387-09766-4\_244.
- [2220] L. While and L. Bradstreet. **Applying the WFG Algorithm to Calculate Incremental Hypervolumes.** In *Proceedings of the 2012 Congress on Evolutionary Computation (CEC’12)*, pages 1–8, Piscataway, NJ, 2012. IEEE Press.
- [2221] L. While, L. Bradstreet, and L. Barone. **A Fast Way of Calculating Exact Hypervolumes.** *IEEE Transactions on Evolutionary Computation*, 16(1):86–95, 2012.
- [2222] D. R. White, A. Arcuri, and J. A. Clark. **Evolutionary Improvement of Programs.** *IEEE Transactions on Evolutionary Computation*, 15(4):515–538, 2011.

- [2223] T. White, B. Pagurek, and F. Oppacher. **Connection Management Using Adaptive Mobile Agents**. In H. R. Arabnia, editor, *Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'98)*, pages 802–809. CSREA Press, 1998.
- [2224] D. Whitley, editor. *Proceedings of the Second Workshop on Foundations of Genetic Algorithms*. Morgan Kaufmann Publishers, 1993. ISBN 1-55860-263-1.
- [2225] D. Whitley, S. Rana, J. Dzubera, and K. E. Mathias. **Evaluating Evolutionary Algorithms**. *Artificial Intelligence*, 85:245–296, 1996.
- [2226] D. Whitley et al., editors. *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2000*. Morgan Kaufmann Publishers, San Francisco, CA, 2000.
- [2227] A. P. Wierzbicki. **The Use of Reference Objectives in Multiobjective Optimisation**. In G. Fandel and T. Gal, editors, *MCDM theory and Application, Proceedings, Hagen*, number 177 in Lecture Notes in Economics and Mathematical Systems, pages 468–486. Springer, Heidelberg, Germany, 1980.
- [2228] W. Wiesemann and T. Stützle. **Iterated Ants: An Experimental Study for the Quadratic Assignment Problem**. In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 5th International Workshop, ANTS 2006*, volume 4150 of *Lecture Notes in Computer Science*, pages 179–190. Springer, Heidelberg, Germany, 2006.
- [2229] R. J. Williams. **Simple Statistical Gradient-Following Algorithms for Connectionist Reinforcement Learning**. *Machine Learning*, 8(3):229–256, 1992.
- [2230] C. Witt. **Analysis of an Iterated Local Search Algorithm for Vertex Cover in Sparse Random Graphs**. *Theoretical Computer Science*, 425:117–125, 2012.
- [2231] S. Wolf and P. Merz. **Iterated Local Search for Minimum Power Symmetric Connectivity in Wireless Networks**. In C. Cotta and P. Cowling, editors, *Proceedings of EvoCOP 2009 – 9th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 5482 of *Lecture Notes in Computer Science*, pages 192–203. Springer, Heidelberg, Germany, 2009.
- [2232] R. Wolfer Calvo. **A New Heuristic for the Traveling Salesman Problem with Time Windows**. *Transportation Science*, 34(1):113–124, 2000. doi:10.1287/trsc.34.1.113.12284.
- [2233] D. H. Wolpert and W. G. Macready. **No Free Lunch Theorems for Optimization**. *IEEE Transactions on Evolutionary Computation*, 1(1):67–82, 1997.
- [2234] H. S. Woo and D. S. Yim. **A Heuristic Algorithm for Mean Flowtime Objective in Flowshop Scheduling**. *Computers & Operations Research*, 25(3):175–182, 1998.
- [2235] D. L. Woodruff, U. Ritzinger, and J. Oppen. **Research Note: The Point of Diminishing Returns in Heuristic Search**. *International Journal of Metaheuristics*, 1(3):222–231, 2011. doi:10.1504/IJMHeur.2011.041195.  
Keywords: anytime.
- [2236] M. N. Wright and A. Ziegler. **ranger: A Fast Implementation of Random Forests for High Dimensional Data in C++ and R**. *Arxiv preprint arXiv:1508.04409 [stat.ML]*, 2015. URL <https://arxiv.org/abs/1508.04409>.



- [2237] M. N. Wright and A. Ziegler. **ranger: A Fast Implementation of Random Forests for High Dimensional Data in C++ and R**. *Journal of Statistical Software*, 77(1): 1–17, 2017. doi:[10.18637/jss.v077.i01](https://doi.org/10.18637/jss.v077.i01).
- [2238] X. Wu, X. Zhu, G.-Q. Wu, and W. Ding. **Data mining with big data**. *IEEE Transactions on Knowledge and Data Engineering*, 26(1):97–107, 2014.
- [2239] Y. Wu, M. Schuster, Z. Chen, Q. V. Le, M. Norouzi, W. Macherey, M. Krikun, Y. Cao, Q. Gao, K. Macherey, et al. **Google’s neural machine translation system: Bridging the gap between human and machine translation**. *Arxiv preprint arXiv:1609.08144 [cs.CL]*, 2016.
- [2240] E. P. Xing and T. Jebara, editors. *Proceedings of the 31th International Conference on Machine Learning, ICML 2014, Beijing, China, 21-26 June 2014*, volume 32, 2014. URL <http://jmlr.org/proceedings/papers/v32/>.
- [2241] H. Xu, Z. Lü, and T. C. E. Cheng. **Iterated Local Search for Single-machine Scheduling with Sequence-dependent Setup Times to Minimize Total Weighted Tardiness**. *Journal of Scheduling*, 17(3):271–287, 2014.
- [2242] J. Xu, S. Y. Chiu, and F. Glover. **Fine-tuning a tabu search algorithm with statistical tests**. *International Transactions in Operational Research*, 5(3):233–244, 1998. doi:[10.1016/S0969-6016\(98\)00017-3](https://doi.org/10.1016/S0969-6016(98)00017-3).
- [2243] L. Xu, F. Hutter, H. H. Hoos, and K. Leyton-Brown. **SATzilla: Portfolio-based Algorithm Selection for SAT**. *Journal of Artificial Intelligence Research*, 32:565–606, June 2008.
- [2244] L. Xu, H. H. Hoos, and K. Leyton-Brown. **Hydra: Automatically Configuring Algorithms for Portfolio-Based Selection**. In M. Fox and D. Poole, editors, *AAAI*. AAAI Press, 2010.  
*Keywords:* automated algorithm design; portfolio-based algorithm selection; automated algorithm configuration; SAT; stochastic local search.
- [2245] L. Xu, F. Hutter, H. H. Hoos, and K. Leyton-Brown. **Hydra-MIP: Automated Algorithm Configuration and Selection for Mixed Integer Programming**. Technical Report TR-2011-01, Department of Computer Science, University of British Columbia, Canada, 2011. URL <http://www.cs.ubc.ca/cgi-bin/tr/2011/TR-2011-01.pdf>.
- [2246] L. Xu, A. R. KhudaBukhsh, H. H. Hoos, and K. Leyton-Brown. **Quantifying the similarity of algorithm configurations**. In P. Festa, M. Sellmann, and J. Vanschoren, editors, *Learning and Intelligent Optimization, 10th International Conference, LION 10*, volume 10079 of *Lecture Notes in Computer Science*, pages 203–217, Cham, Switzerland, 2016. Springer.
- [2247] M. Yagiura, M. Kishida, and T. Ibaraki. **A 3-Flip Neighborhood Local Search for the Set Covering Problem**. *European Journal of Operational Research*, 172(2): 472–499, 2006.
- [2248] Q. Yang and M. Wooldridge, editors. *IJCAI 2015, Proceedings of the 24th International Joint Conference on Artificial Intelligence, Buenos Aires, Argentina, July 25-31, 2015*, 2015. IJCAI/AAAI Press, Menlo Park, CA.

- [2249] S. Yang, M. Li, X. Liu, and J. Zheng. **A Grid-Based Evolutionary Algorithm for Many-Objective Optimization**. *IEEE Transactions on Evolutionary Computation*, 17(5):721–736, 2013.
- [2250] Y. Yang, S. Kreipl, and M. L. Pinedo. **Heuristics for Minimizing Total Weighted Tardiness in Flexible Flow Shops**. *Journal of Scheduling*, 3(2):89–108, 2000.
- [2251] X. Yao et al., editors. *Proceedings of PPSN-VIII, Eighth International Conference on Parallel Problem Solving from Nature, Birmingham, UK*, volume 3242 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2004.
- [2252] A. Yarimcam, S. Asta, E. Özcan, and A. J. Parkes. **Heuristic Generation via Parameter Tuning for Online Bin Packing**. In P. Angelov et al., editors, *Evolving and Autonomous Learning Systems (EALS), 2014 IEEE Symposium on*, pages 102–108. IEEE, 2014. doi:10.1109/EALS.2014.7009510.  
*Keywords:* irace.
- [2253] G. Yavuz, D. Aydın, and T. Stützle. **Self-adaptive Search Equation-based Artificial Bee Colony Algorithm on the CEC 2014 Benchmark Functions**. In *Proceedings of the 2016 Congress on Evolutionary Computation (CEC 2016)*, pages 1173–1180. IEEE Press, Piscataway, NJ, 2016. ISBN 978-1-5090-0623-6.
- [2254] C. Young, D. S. Johnson, D. R. Karger, and M. D. Smith. **Near-optimal Intraprocedural Branch Alignment**. In M. C. Chen, R. K. Cytron, and A. M. Berman, editors, *Proceedings of the ACM SIGPLAN’97 Conference on Programming Language Design and Implementation (PLDI), Las Vegas, Nevada*, pages 183–193. ACM Press, 1997.
- [2255] G. Yu, R. S. Powell, and M. J. H. Sterling. **Optimized Pump Scheduling in Water Distribution Systems**. *Journal of Optimization Theory and Applications*, 83(3):463–488, 1994.
- [2256] H. Yu. *Rmpi: Interface (Wrapper) to MPI (Message-Passing Interface)*, 2010. URL <http://cran.r-project.org/package=Rmpi>. R package version 0.5-8.
- [2257] V. F. Yu and S.-W. Lin. **Iterated Greedy Heuristic for the Time-dependent Prize-collecting Arc Routing Problem**. *Computers and Industrial Engineering*, 90: 54–66, 2015.
- [2258] B. Yuan and M. Gallagher. **Statistical Racing Techniques for Improved Empirical Evaluation of Evolutionary Algorithms**. In X. Yao et al., editors, *Proceedings of PPSN-VIII, Eighth International Conference on Parallel Problem Solving from Nature*, volume 3242 of *Lecture Notes in Computer Science*, pages 172–181. Springer, Heidelberg, Germany, 2004.
- [2259] Z. Yuan, A. Fügenschuh, H. Homfeld, P. Balaprakash, T. Stützle, and M. Schoch. **Iterated Greedy Algorithms for a Real-World Cyclic Train Scheduling Problem**. In M. J. Blesa, C. Blum, C. Cotta, A. J. Fernández, J. E. Gallardo, A. Roli, and M. Sampels, editors, *Hybrid Metaheuristics*, volume 5296 of *Lecture Notes in Computer Science*, pages 102–116. Springer, Heidelberg, Germany, 2008.
- [2260] Z. Yuan, M. A. Montes de Oca, T. Stützle, and M. Birattari. **Continuous Optimization Algorithms for Tuning Real and Integer Algorithm Parameters of Swarm Intelligence Algorithms**. *Swarm Intelligence*, 6(1):49–75, 2012.

- [2261] Z. Yuan, M. A. Montes de Oca, T. Stützle, H. C. Lau, and M. Birattari. **An Analysis of Post-selection in Automatic Configuration**. In C. Blum and E. Alba, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2013*, pages 1557–1564. ACM Press, New York, NY, 2013.
- [2262] L. Yuefeng, W. Du, and T. Stützle. **Three L-SHADE Based Algorithms on Mixed-variables Optimization Problems**. In *Proceedings of the 2017 Congress on Evolutionary Computation (CEC 2017)*, pages 2274–2281. IEEE Press, Piscataway, NJ, 2017.
- [2263] M. Zaefferer, J. Stork, and T. Bartz-Beielstein. **Distance Measures for Permutations in Combinatorial Efficient Global Optimization**. In T. Bartz-Beielstein, J. Branke, B. Filipič, and J. Smith, editors, *PPSN 2014*, volume 8672 of *Lecture Notes in Computer Science*, pages 373–383. Springer, Heidelberg, Germany, 2014.
- [2264] M. Zaefferer, J. Stork, M. Frieze, A. Fischbach, B. Naujoks, and T. Bartz-Beielstein. **Efficient Global Optimization for Combinatorial Problems**. In C. Igel and D. V. Arnold, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2014*, pages 871–878. ACM Press, New York, NY, 2014.
- [2265] E. Zarpas. **Benchmarking SAT solvers for bounded model checking**. In F. Bacchus and T. Walsh, editors, *International Conference on Theory and Applications of Satisfiability Testing*, volume 3569, pages 340–354, 2005.
- [2266] Q. Zeng and Z. Yang. **Integrating Simulation and Optimization to Schedule Loading Operations in Container Terminals**. *Computers & Operations Research*, 36(6):1935–1944, 2009. doi:10.1016/j.cor.2008.06.010.
- [2267] J. Zhang and A. C. Sanderson. **JADE: adaptive differential evolution with optional external archive**. *IEEE Transactions on Evolutionary Computation*, 13(5):945–958, 2009. doi:10.1109/TEVC.2009.2014613.
- [2268] Q. Zhang. **MOEA/D homepage**. <https://dces.essex.ac.uk/staff/zhang/webofmoead.htm>, 2007.
- [2269] Q. Zhang and H. Li. **MOEA/D: A Multiobjective Evolutionary Algorithm Based on Decomposition**. *IEEE Transactions on Evolutionary Computation*, 11(6):712–731, 2007. doi:10.1109/TEVC.2007.892759.  
*Annotation:* Introduces penalty-based boundary intersection (PBI) function.
- [2270] Q. Zhang and P. N. Suganthan. **Special Session on Performance Assessment of Multiobjective Optimization Algorithms/CEC’09 MOEA Competition**. <http://dces.essex.ac.uk/staff/qzhang/moeacompetition09.htm>, 2009.
- [2271] Q. Zhang, W. Liu, and H. Li. **The Performance of a New Version of MOEA/D on CEC09 Unconstrained MOP Test Instances**. In *Proceedings of the 2009 Congress on Evolutionary Computation (CEC 2009)*, pages 203–208, Piscataway, NJ, 2009. IEEE Press.
- [2272] T. Zhang, M. Georgiopoulos, and G. C. Anagnostopoulos. **S-Race: A Multi-Objective Racing Algorithm**. In C. Blum and E. Alba, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2013*, pages 1565–1572. ACM Press, New York, NY, 2013.

- [2273] T. Zhang, M. Georgiopoulos, and G. C. Anagnostopoulos. **SPRINT: Multi-Objective Model Racing**. In S. Silva and A. I. Esparcia-Alcázar, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2015*, pages 1383–1390. ACM Press, New York, NY, 2015. doi:10.1145/2739480.2754791.  
*Keywords:* model selection, multi-objective optimization, racing algorithm, sequential probability ratio test.
- [2274] T. Zhang, M. Georgiopoulos, and G. C. Anagnostopoulos. **Multi-Objective Model Selection via Racing**. *IEEE Transactions on Cybernetics*, 46(8):1863–1876, 2016.
- [2275] L. Zhen and D.-F. Chang. **A bi-objective model for robust berth allocation scheduling**. *Computers and Industrial Engineering*, 63(1):262–273, 2012.
- [2276] S. Zilberstein. **Using Anytime Algorithms in Intelligent Systems**. *AI Magazine*, 17(3):73–83, 1996.
- [2277] S. Zilberstein, J. Koehler, and S. Koenig, editors. *Proceedings of the Fourteenth International Conference on Automated Planning and Scheduling (ICAPS 2004)*. AAAI Press/MIT Press, Menlo Park, CA, 2004.
- [2278] E. Zitzler. *Evolutionary Algorithms for Multiobjective Optimization: Methods and Applications*. PhD thesis, ETH Zürich, Switzerland, 1999.
- [2279] E. Zitzler and S. Künzli. **Indicator-based Selection in Multiobjective Search**. In X. Yao et al., editors, *Proceedings of PPSN-VIII, Eighth International Conference on Parallel Problem Solving from Nature*, volume 3242 of *Lecture Notes in Computer Science*, pages 832–842. Springer, Heidelberg, Germany, 2004.  
*Keywords:* IBEA.
- [2280] E. Zitzler and L. Thiele. **Multiobjective Optimization Using Evolutionary Algorithms - A Comparative Case Study**. In A. E. Eiben, T. Bäck, M. Schoenauer, and H.-P. Schwefel, editors, *Parallel Problem Solving from Nature, PPSN V*, volume 1498 of *Lecture Notes in Computer Science*, pages 292–301. Springer, Heidelberg, Germany, 1998.  
*Annotation:* Introduces hypervolume measure.
- [2281] E. Zitzler and L. Thiele. **Multiobjective Evolutionary Algorithms: A Comparative Case Study and the Strength Pareto Evolutionary Algorithm**. *IEEE Transactions on Evolutionary Computation*, 3(4):257–271, 1999.  
*Annotation:* Introduces SPEA, <http://www.tik.ee.ethz.ch/sop/publicationListFiles/zt1999a.pdf>.
- [2282] E. Zitzler, L. Thiele, and K. Deb. **Comparison of Multiobjective Evolutionary Algorithms: Empirical Results**. *Evolutionary Computation*, 8(2):173–195, 2000. doi:10.1162/106365600568202.  
*Keywords:* ZDT benchmark.
- [2283] E. Zitzler, K. Deb, L. Thiele, C. A. Coello Coello, and D. Corne, editors. *Evolutionary multi-criterion optimization: first international conference, EMO 2001, Zurich, Switzerland, March 2001: proceedings*, volume 1993 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2001.
- [2284] E. Zitzler, M. Laumanns, and L. Thiele. **SPEA2: Improving the Strength Pareto Evolutionary Algorithm**. Technical Report 103, Computer Engineering and Networks

Laboratory (TIK), Swiss Federal Institute of Technology (ETH), Zürich, Switzerland, 2001.

- [2285] E. Zitzler, M. Laumanns, and L. Thiele. **SPEA2: Improving the Strength Pareto Evolutionary Algorithm for Multiobjective Optimization**. In K. C. Giannakoglou, D. T. Tsahalis, J. Periaux, K. D. Papaliliou, and T. Fogarty, editors, *Evolutionary Methods for Design, Optimisation and Control*, pages 95–100. CIMNE, Barcelona, Spain, 2002.
- [2286] E. Zitzler, L. Thiele, M. Laumanns, C. M. Fonseca, and V. Grunert da Fonseca. **Performance Assessment of Multiobjective Optimizers: an Analysis and Review**. *IEEE Transactions on Evolutionary Computation*, 7(2):117–132, 2003.
- [2287] E. Zitzler, D. Brockhoff, and L. Thiele. **The Hypervolume Indicator Revisited: On the Design of Pareto-compliant Indicators Via Weighted Integration**. In S. Obayashi et al., editors, *Evolutionary Multi-criterion Optimization, EMO 2007*, volume 4403 of *Lecture Notes in Computer Science*, pages 862–876. Springer, Heidelberg, Germany, 2007. doi:10.1007/978-3-540-70928-2\_64. Supplementary material: <http://www.tik.ee.ethz.ch/sop/download/supplementary/weightedHypervolume/>.
- [2288] E. Zitzler, J. D. Knowles, and L. Thiele. **Quality Assessment of Pareto Set Approximations**. In J. Branke, K. Deb, K. Miettinen, and R. Słowiński, editors, *Multi-objective Optimization: Interactive and Evolutionary Approaches*, volume 5252 of *Lecture Notes in Computer Science*, pages 373–404. Springer, Heidelberg, Germany, 2008.
- [2289] E. Zitzler, L. Thiele, and J. Bader. **SPAM: Set Preference Algorithm for Multiobjective Optimization**. In G. Rudolph et al., editors, *Parallel Problem Solving from Nature, PPSN X*, volume 5199 of *Lecture Notes in Computer Science*, pages 847–858. Springer, Heidelberg, Germany, 2008.
- [2290] E. Zitzler, L. Thiele, and J. Bader. **On Set-Based Multiobjective Optimization**. *IEEE Transactions on Evolutionary Computation*, 14(1):58–79, 2010. doi:10.1109/TEVC.2009.2016569.
- [2291] M. Zlochin, M. Birattari, N. Meuleau, and M. Dorigo. **Model-Based Search for Combinatorial Optimization: A Critical Survey**. *Annals of Operations Research*, 131(1–4):373–395, 2004.
- [2292] A. Zujevs and J. Eiduks. **New decision maker model for multiobjective optimization interactive methods**. In *17th International Conference on Information and Software Technologies, Kaunas, Lithuania*, 2011.  
*Keywords:* Machine Decision Maker.