

IRIDIA B<sub>I</sub>B<sub>T</sub>E<sub>X</sub> Repository (November 20, 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 E. K. Burke and G. Kendall, editors, *Search Methodologies*, pages 187–210. Springer, Boston, MA, 2005. doi:10.1007/0-387-28356-0.
- [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] ACM. **Artifact Review and Badging Version 1.1**. <https://www.acm.org/publications/policies/artifact-review-and-badging-current>, Aug. 2020.
- [14] 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.

- [15] 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.
- [16] B. Adenso-Díaz. **Restricted Neighborhood in the Tabu Search for the Flowshop Problem.** *European Journal of Operational Research*, 62(1):27–37, 1992.
- [17] B. Adenso-Díaz and M. Laguna. **Fine-Tuning of Algorithms Using Fractional Experimental Design and Local Search.** *Operations Research*, 54(1):99–114, 2006.
- [18] 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.
- [19] 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.
- [20] 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.
- [21] 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.
- [22] 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.
- [23] A. Aho, J. Hopcroft, and J. Ullman. *Data structures and algorithms.* Addison-Wesley, Reading, MA, 1983.
- [24] R. K. Ahuja, T. Magnanti, and J. B. Orlin. *Network Flows: Theory, Algorithms and Applications.* Prentice-Hall, 1993.
- [25] 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.
- [26] 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.
- [27] 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.  
*Keywords:* anytime.
- [28] 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.
- [29] 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.

- [30] 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=0ZLsAAACAAJ>.
- [31] 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.
- [32] E. Alba and F. Chicano. **ACOhg: 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.
- [33] 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.
- [34] 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.
- [35] 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.
- [36] 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.
- [37] 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.
- [38] A. Ali and M. Meilă. **Experiments with Kemeny ranking: What Works When?** *Mathematical Social Science*, 64(1):28–40, July 2012. doi:10.1016/j.mathsocsci.2011.08.008. *Keywords:* Borda ranking, Kemeny ranking. *Annotation:* Computational Foundations of Social Choice.
- [39] 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. doi:10.1145/3321707.
- [40] 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.
- [41] R. Allmendinger. *Tuning evolutionary search for closed-loop optimization*. PhD thesis, The University of Manchester, UK, 2012.
- [42] R. Allmendinger and J. D. Knowles. **Evolutionary Search in Lethal Environments**. In *International Conference on Evolutionary Computation Theory and Applications*, pages 63–72. SciTePress, 2011. doi:10.5220/0003673000630072.

- [43] 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](https://doi.org/10.1016/j.ejor.2009.01.019).  
Keywords: Ant colony optimization, Manufacturing, Material requirements planning, Mixed-integer programming.
- [44] 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.
- [45] 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.
- [46] 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.
- [47] 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.
- [48] C. Amir, A. Badr, and I. Farag. **A Fuzzy Logic Controller for Ant Algorithms.** *Computing and Information Systems*, 11(2):26–34, 2007.
- [49] 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.
- [50] 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.
- [51] K. A. Andersen, K. Jörnsten, and M. Lind. **On bicriterion minimal spanning trees: An approximation.** *Computers & Operations Research*, 23(12):1171–1182, 1996.
- [52] 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.
- [53] Y. P. Aneja and K. P. K. Nair. **Bicriteria Transportation Problem.** *Management Science*, 25(1):73–78, 1979.
- [54] 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](https://doi.org/10.1016/S0304-3975(03)00376-1).  
Keywords: Archiving, Local search, Multicriteria TSP, Approximation algorithms.
- [55] P. Angelov et al., editors. *Evolving and Autonomous Learning Systems (EALS), 2014 IEEE Symposium on*, 2014. IEEE.
- [56] 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.

- [57] 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](https://doi.org/10.1007/978-3-540-76931-6_21).
- [58] D. Angus and C. Woodward. **Multiple Objective Ant Colony Optimisation**. *Swarm Intelligence*, 3(1):69–85, 2009. doi:[10.1007/s11721-008-0022-4](https://doi.org/10.1007/s11721-008-0022-4).
- [59] 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, New York, NY, 2014. ACM Press. doi:[10.1145/2628071.2628092](https://doi.org/10.1145/2628071.2628092).
- [60] 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](https://doi.org/10.1007/978-3-642-04244-7_14).  
*Keywords:* GGA.
- [61] C. Ansótegui, Y. Malitsky, and M. Sellmann. **MaxSAT by Improved Instance-Specific Algorithm Configuration**. In D. Straczuzi et al., editors, *AAAI*, pages 2594–2600. AAAI Press, 2014.
- [62] 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.  
*Keywords:* GGA++.
- [63] 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.
- [64] K. Anstreicher, N. Brixius, J.-P. Goux, and J. Linderoth. **Solving large quadratic assignment problems on computational grids**. *Mathematical Programming Series B*, 91(3):563–588, Feb. 2002. doi:[10.1007/s101070100255](https://doi.org/10.1007/s101070100255).
- [65] Apache Software Foundation. **Hadoop**, 2008. URL <https://hadoop.apache.org>.
- [66] Apache Software Foundation. **Spark**, 2012. URL <https://spark.apache.org>.
- [67] 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](https://doi.org/10.1093/comjnl/3.4.237).
- [68] D. Applegate and W. J. Cook. **A Computational Study of the Job-Shop Scheduling Problem**. *ORSA Journal on Computing*, 3(2):149–156, 1991.
- [69] 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.
- [70] 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.
- [71] 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.
- [72] 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.

- [73] 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.
- [74] D. Applegate, R. E. Bixby, V. Chvátal, and W. J. Cook. *The Traveling Salesman Problem: A Computational Study*. Princeton University Press, Princeton, NJ, 2006.
- [75] 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.
- [76] 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.
- [77] 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.
- [78] H. R. Arabnia, editor. *Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'98)*. CSREA Press, 1998.
- [79] 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.
- [80] 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.
- [81] 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.
- [82] 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>.
- [83] J. E. C. 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.
- [84] J. E. C. 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.
- [85] J. E. C. Arroyo and J. Y.-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.
- [86] E. Arza, J. Ceberio, A. Pérez, and E. Irurozki. **Approaching the quadratic assignment problem with kernels of mallows models under the hamming distance**. In M. López-Ibáñez, A. Auger, and T. Stützle, editors, *GECCO'19 Companion*. ACM Press, New York, NY, 2019. ISBN 978-1-4503-6748-6. doi:10.1145/3319619.3321976. *Keywords*: QAP, EDA, Mallows.



- [87] 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.
- [88] N. Ascheuer. *Hamiltonian Path Problems in the On-line Optimization of Flexible Manufacturing Systems*. PhD thesis, Technische Universität Berlin, Berlin, Germany, 1995.
- [89] 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.
- [90] 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](https://doi.org/10.1007/s10107-003-0400-z).
- [91] 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.
- [92] C. Audet and D. Orban. **Finding Optimal Algorithmic Parameters Using Derivative-Free Optimization**. *SIAM Journal on Optimization*, 17(3):642–664, 2006.
- [93] 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.
- [94] C. Audet, C.-K. Dang, and D. Orban. **Optimization of Algorithms with OPAL**. *Mathematical Programming Computation*, 6(3):233–254, 2014.
- [95] P. Audze and V. Eglājs. **New approach to the design of multifactor experiments**. *Problems of Dynamics and Strengths*, 35:104–107, 1977. (in Russian).
- [96] P. Auer. **Using Confidence Bounds for Exploitation-Exploration Trade-offs**. *Journal of Machine Learning Research*, 3:397–422, Nov. 2002.
- [97] P. Auer, N. Cesa-Bianchi, and P. Fischer. **Finite-time analysis of the multiarmed bandit problem**. *Machine Learning*, 47(2-3):235–256, 2002.
- [98] 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](https://doi.org/10.1109/CEC.2005.1554902).  
*Keywords*: IPOP-CMA-ES.
- [99] 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.
- [100] 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.
- [101] 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.

- [102] 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.
- [103] 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](https://doi.org/10.1016/j.tcs.2011.03.012).
- [104] 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](https://doi.org/10.4230/DagRep.2.1.50).
- [105] 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.
- [106] 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.
- [107] 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.
- [108] 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.
- [109] 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.
- [110] 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.
- [111] D. Aydın, G. Yavuz, and T. Stützle. **ABC-X: A Generalized, Automatically Configurable Artificial Bee Colony Framework.** *Swarm Intelligence*, 11(1):1–38, 2017.
- [112] 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.
- [113] D. Babić. **Spear theorem prover.** <https://www.domagoj-babic.com/index.php/ResearchProjects/Spear>, 2008.



- [114] 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).
- [115] D. Babić and F. Hutter. **Spear Theorem Prover**. In *SAT’08: Proceedings of the SAT 2008 Race*, 2008. Supplementary material: <https://www.domagoj-babic.com/index.php/ResearchProjects/Spear>.  
Annotation: Unreviewed paper.
- [116] F. Bacchus and T. Walsh, editors. *International Conference on Theory and Applications of Satisfiability Testing*, volume 3569, 2005.
- [117] 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.
- [118] 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).
- [119] F. Bachoc, C. Helbert, and V. Picheny. **Gaussian process optimization with failures: Classification and convergence proof**. *Journal of Global Optimization*, 2020. doi:10.1007/s10898-020-00920-0.  
Keywords: crashed simulation; latent gaussian process; automotive fan design; industrial application; GP classification; Expected Feasible Improvement with Gaussian Process Classification with signs; EFI GPC sign.
- [120] T. Bäck. *Evolutionary algorithms in theory and practice: evolution strategies, evolutionary programming, genetic algorithms*. Oxford University Press, 1996.
- [121] 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.
- [122] 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.
- [123] T. Bäck, D. B. Fogel, and Z. Michalewicz. *Handbook of evolutionary computation*. IOP Publishing, 1997.
- [124] 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.
- [125] 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.
- [126] H. Baharmand, T. Comes, and M. Lauras. **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.
- [127] 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.

- [128] 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.
- [129] 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.
- [130] 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.
- [131] 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.
- [132] 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).
- [133] 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).
- [134] E. Balas and M. C. Carrera. **A Dynamic Subgradient-based Branch and Bound Procedure for Set Covering.** *Operations Research*, 44(6):875–890, 1996.
- [135] 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.
- [136] E. Balas and C. Martin. **Pivot and Complement—A Heuristic for 0–1 Programming.** *Management Science*, 26(1):86–96, 1980.
- [137] E. Balas and M. W. Padberg. **Set Partitioning: A Survey.** *SIAM Review*, 18:710–760, 1976.
- [138] 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.
- [139] E. Balas and A. Vazacopoulos. **Guided Local Search with Shifting Bottleneck for Job Shop Scheduling.** *Management Science*, 44(2):262–275, 1998.
- [140] 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).
- [141] 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.

- [142] 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.
- [143] 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.
- [144] E. Bareinboim and J. Pearl. **Causal inference and the data-fusion problem**. *Proceedings of the National Academy of Sciences*, 113(27):7345–7352, 2016. doi:[10.1073/pnas.1510507113](https://doi.org/10.1073/pnas.1510507113).
- [145] C. Barnhart, E. L. Johnson, G. L. Nemhauser, M. W. P. Savelsbergh, and P. H. Vance. **Branch-and-price: Column generation for solving huge integer programs**. *Operations Research*, 46(3):316–329, 1998.
- [146] 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).
- [147] E. Bartholomew and J. H. Kwakkel. **On considering robustness in the search phase of Robust Decision Making: A comparison of Many-Objective Robust Decision Making, multi-scenario Many-Objective Robust Decision Making, and Many Objective Robust Optimization**. *Environmental Modelling & Software*, 127:104699, 2020. doi:[10.1016/j.envsoft.2020.104699](https://doi.org/10.1016/j.envsoft.2020.104699).
- [148] 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.
- [149] T. Bartz-Beielstein. *Experimental Research in Evolutionary Computation: The New Experimentalism*. Springer, Berlin, Germany, 2006. Keywords: SPO.
- [150] 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.
- [151] 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.
- [152] 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.
- [153] 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.
- [154] 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.
- [155] T. Bartz-Beielstein, M. Chiarandini, L. Paquete, and M. Preuss, editors. *Experimental Methods for the Analysis of Optimization Algorithms*. Springer, Berlin, Germany, 2010.

- [156] 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.
- [157] 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.
- [158] 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.
- [159] 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.
- [160] T. Bartz-Beielstein, B. Filipič, P. Korošec, and E.-G. Talbi, editors. *High-Performance Simulation-Based Optimization*. Springer International Publishing, Cham, Switzerland, 2020.
- [161] M. Basseur, A. Goëffon, A. Liefoghe, 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.
- [162] 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.
- [163] 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.
- [164] R. Battiti and P. Campigotto. **Reactive search optimization: Learning while optimizing. An experiment in interactive multi-objective optimization**. In M. Caserta and S. Voß, editors, *Proceedings of MIC 2009, the 8th Metaheuristics International Conference*, Hamburg, Germany, 2010. University of Hamburg.
- [165] 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.  
*Keywords*: BC-EMOA.  
*Annotation*: Errata: DTLZ6 and DTLZ7 in the paper are actually DTLZ7 and DTLZ8 in [609].
- [166] R. Battiti and M. Protasi. **Reactive Search, A History-Based Heuristic for MAX-SAT**. *ACM Journal of Experimental Algorithmics*, 2, 1997.
- [167] 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.
- [168] R. Battiti and G. Tecchiolli. **The Reactive Tabu Search**. *ORSA Journal on Computing*, 6(2): 126–140, 1994.

- [169] 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.
- [170] 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.
- [171] 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.
- [172] 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.
- [173] E. B. Baum. **Iterated Descent: A Better Algorithm for Local Search in Combinatorial Optimization Problems.** Manuscript, 1986.
- [174] E. B. Baum. **Towards Practical “Neural” Computation for Combinatorial Optimization Problems.** In *Neural Networks for Computing, AIP Conference Proceedings*, pages 53–64, 1986.
- [175] 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.
- [176] 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.
- [177] 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.
- [178] J. Baxter. **Local Optima Avoidance in Depot Location.** *Journal of the Operational Research Society*, 32(9):815–819, 1981.
- [179] 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.
- [180] 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.
- [181] 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.   
Keywords: city resilience, city peer review, disaster risk governance.
- [182] 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>.
- [183] J. E. Beasley. **Heuristic algorithms for the unconstrained binary quadratic programming problem.** Technical report, The Management School, Imperial College, London, England, 1998.



- [184] 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.
- [185] J. E. Beasley and P. C. Chu. **A Genetic Algorithm for the Multidimensional Knapsack Problem**. *Journal of Heuristics*, 4(1):63–86, 1998.
- [186] 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.
- [187] D. D. Bedworth and J. E. Bailey. *Integrated Production Control Systems: Management, Analysis, Design*, volume 2. John Wiley & Sons, New York, NY, 1982.
- [188] J. Behnamian and S. Fatemi Ghomi. **Hybrid Flowshop Scheduling with Machine and Resource-dependent Processing Times**. *Applied Mathematical Modelling*, 35(3):1107–1123, 2011.
- [189] 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.
- [190] 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.
- [191] 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.
- [192] 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.
- [193] R. Bellman. **The theory of dynamic programming**. *Bulletin of the American Mathematical Society*, 60:503–515, 1954.
- [194] 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.
- [195] 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.
- [196] 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.
- [197] 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.



- [198] 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](https://doi.org/10.1016/j.cor.2015.08.001).
- [199] 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.
- [200] J. F. Benders. **Partitioning Procedures for Solving Mixed-variables Programming Problems**. *Numerische Mathematik*, 4(3):238–252, 1962.
- [201] 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.
- [202] 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](https://doi.org/10.1007/978-3-642-13800-3).
- [203] U. Benlic and J.-K. Hao. **Breakout Local Search for the Quadratic Assignment Problem**. *Applied Mathematics and Computation*, 219(9):4800–4815, 2013.
- [204] 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.
- [205] J. L. Bentley. **Fast Algorithms for Geometric Traveling Salesman Problems**. *ORSA Journal on Computing*, 4(4):387–411, 1992.
- [206] L. Berger, J. Emmerling, and M. Tavoni. **Managing catastrophic climate risks under model uncertainty aversion**. *Management Science*, 63(3):749–765, 2017.
- [207] J. S. Bergstra and Y. Bengio. **Random Search for Hyper-Parameter Optimization**. *Journal of Machine Learning Research*, 13:281–305, 2012.
- [208] 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>.
- [209] F. Berkenkamp, A. Krause, and A. P. Schoellig. **Bayesian Optimization with Safety Constraints: Safe and Automatic Parameter Tuning in Robotics**. *Arxiv preprint arXiv:1602.04450*, 2016. URL <http://arxiv.org/abs/1602.04450>.
- [210] F. Berkenkamp, A. P. Schoellig, and A. Krause. **Safe controller optimization for quadrotors with Gaussian processes**. In *2016 IEEE International Conference on Robotics and Automation (ICRA)*, pages 491–496. IEEE, 2016. doi:[10.1109/ICRA.2016.7487170](https://doi.org/10.1109/ICRA.2016.7487170).
- [211] 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.

- [212] 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.
- [213] D. Bertsekas. *Dynamic Programming and Optimal Control*. Athena Scientific, Belmont, MA, 1995.
- [214] D. Bertsekas. *Network Optimization: Continuous and Discrete Models*. Athena Scientific, Belmont, MA, 1998.
- [215] D. P. Bertsekas, J. N. Tsitsiklis, and C. Wu. **Rollout Algorithms for Combinatorial Optimization**. *Journal of Heuristics*, 3(3):245–262, 1997.
- [216] 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.
- [217] 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 [219].
- [218] 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.
- [219] 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.
- [220] H. Beyer and U. O’Reilly, editors. *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2005*. ACM Press, New York, NY, 2005.
- [221] H.-G. Beyer and H.-P. Schwefel. **Evolution Strategies: A Comprehensive Introduction**. *Natural Computing*, 1:3–52, 2002.
- [222] 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.
- [223] 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/>.
- [224] 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.
- [225] 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.

- [226] 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.
- [227] 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.
- [228] 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.
- [229] 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/>.
- [230] 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.
- [231] 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.
- [232] 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.
- [233] 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.
- [234] 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.
- [235] 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.
- [236] 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/>.

- [237] 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.
- [238] 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.
- [239] 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.
- [240] 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.
- [241] 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.
- [242] 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.
- [243] 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 [250].
- [244] 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/>.
- [245] 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 [249].
- [246] 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.
- [247] 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/>.
- [248] 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.

- [249] L. C. T. Bezerra, M. López-Ibáñez, and T. Stützle. **Automatically Designing State-of-the-Art Multi- and Many-Objective Evolutionary Algorithms**. *Evolutionary Computation*, 28(2):195–226, 2020. doi:10.1162/evco\_a\_00263. Supplementary material: <http://iridia.ulb.ac.be/supp/IridiaSupp2016-004/>.
- [250] 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.
- [251] 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.
- [252] 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.
- [253] 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.
- [254] A. Biedenkapp, M. Lindauer, K. Eggensperger, 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>.
- [255] 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.
- [256] 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. Järvisalo, 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.
- [257] 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, Berlin, Germany, 1995. doi:10.1007/3-540-60469-3\_22.
- [258] 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.
- [259] 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.
- [260] 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.



- [261] 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.
- [262] 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](https://doi.org/10.1007/978-3-642-00483-4).
- [263] 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.
- [264] 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.
- [265] 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.
- [266] 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.
- [267] 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](https://doi.org/10.1109/TEVC.2007.892762).
- [268] 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.
- [269] 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.
- [270] 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.
- [271] 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.
- [272] 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>.



- [273] S. Bird, E. Klein, and E. Loper. *Natural language processing with Python: analyzing text with the natural language toolkit*. " O'Reilly Media, Inc.", 2009.
- [274] 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.
- [275] 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.
- [276] 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.
- [277] B. Bischl, M. Lang, J. Bossek, L. Judd, J. Richter, T. Kuehn, and E. Studerus. *mlr: Machine Learning in R*, 2013. URL <http://cran.r-project.org/package=mlr>. R package.
- [278] B. Bischl, P. Kerschke, L. Kotthoff, M. T. Lindauer, Y. Malitsky, A. Fr  chette, 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.
- [279] 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.
- [280] 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.
- [281] 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>.
- [282] C. M. Bishop. *Pattern recognition and machine learning*. Springer, 2006.
- [283] E. Bıyık, 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.
- [284] 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>.
- [285] X. Blasco, J. M. Herrero, J. Sanchis, and M. Mart  nez. **A new graphical visualization of n-dimensional Pareto front for decision-making in multiobjective optimization**. *Information Sciences*, 178(20):3908–3924, 2008.
- [286] 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.

- [287] 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.
- [288] 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.
- [289] 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.
- [290] 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.
- [291] 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.
- [292] 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.
- [293] 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.
- [294] 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.
- [295] 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.
- [296] 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.
- [297] 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.
- [298] 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.

- [299] 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).
- [300] 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.
- [301] 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.
- [302] 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).
- [303] 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.
- [304] 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.
- [305] C. Blum and M. López-Ibáñez. **Ant Colony Optimization**. In *The Industrial Electronics Handbook: Intelligent Systems*. CRC Press, 2nd edition, 2011. ISBN 9781439802830. URL <http://www.crcpress.com/product/isbn/9781439802830>.
- [306] 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.
- [307] C. Blum and D. Merkle, editors. *Swarm Intelligence—Introduction and Applications*. Natural Computing Series. Springer Verlag, Berlin, Germany, 2008.
- [308] 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.
- [309] C. Blum and G. R. Raidl. *Hybrid Metaheuristics—Powerful Tools for Optimization*. Artificial Intelligence: Foundations, Theory, and Algorithms. Springer, Springer, Berlin, Germany, 2016.
- [310] C. Blum and A. Roli. **Metaheuristics in Combinatorial Optimization: Overview and Conceptual Comparison**. *ACM Computing Surveys*, 35(3):268–308, 2003.
- [311] 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.
- [312] 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:JMMA.0000038614.39977.6f](https://doi.org/10.1023/B:JMMA.0000038614.39977.6f).
- [313] 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](https://doi.org/10.1007/11890584).

- [314] 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](https://doi.org/10.1007/11839088_9).
- [315] 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.
- [316] 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* [\[319\]](#).
- [317] 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.
- [318] 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.
- [319] 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](https://doi.org/10.1016/j.cor.2009.02.005).
- [320] 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.
- [321] 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](https://doi.org/10.1007/s11721-015-0110-1).  
*Keywords:* irace.
- [322] 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](https://doi.org/10.1016/j.cor.2015.10.014).  
*Keywords:* irace.
- [323] 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.
- [324] K. D. Boese. *Models for Iterative Global Optimization*. PhD thesis, University of California, Computer Science Department, Los Angeles, CA, 1996.
- [325] K. D. Boese, A. B. Kahng, and S. Muddu. **A New Adaptive Multi-Start Technique for Combinatorial Global Optimization**. *Operations Research Letters*, 16(2):101–113, 1994.  
*Keywords:* big-valley hypothesis, TSP, landscape analysis.
- [326] I. O. Bohachevsky, M. E. Johnson, and M. L. Stein. **Generalized Simulated Annealing for Function Optimization**. *Technometrics*, 28(3):209–217, 1986.
- [327] M. Bohanec. **Decision making: a computer-science and information-technology viewpoint**. *Interdisciplinary Description of Complex Systems*, 7(2):22–37, 2009.
- [328] B. Bollobás. *Random Graphs*. Cambridge University Press, New York, NY, 2nd edition, 2001.

- [329] 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.
- [330] G. Booch, J. E. Rumbaugh, and I. Jacobson. *The Unified Modeling Language User Guide*. Addison-Wesley, 2nd edition, 2005.
- [331] P. C. Borges. **CHESS - Changing Horizon Efficient Set Search: A simple principle for multiobjective optimization**. *Journal of Heuristics*, 6(3):405–418, 2000.
- [332] 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.
- [333] A. Borodin and R. El-Yaniv. *Online computation and competitive analysis*. Cambridge University Press, New York, NY, 1998. ISBN 0-521-56392-5.
- [334] 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.
- [335] B. E. Boser, I. Guyon, and V. Vapnik. **A Training Algorithm for Optimal Margin Classifiers**. In D. Haussler, editor, *COLT’92*, pages 144–152. ACM Press, 1992. doi:10.1145/130385.130401.  
Annotation: Proposed SVM.
- [336] P. A. N. Bosman, editor. *Genetic and Evolutionary Computation Conference, GECCO 2017, Berlin, Germany, July 15-19, 2017*. ACM Press, New York, NY, 2017.
- [337] P. A. N. Bosman, editor. *Genetic and Evolutionary Computation Conference, GECCO 2017, Berlin, Germany, July 15-19, 2017*. ACM Press, New York, NY, 2017.
- [338] J. Bossek. *smoof: Single and Multi-Objective Optimization Test Functions*, 2016. URL <http://CRAN.R-project.org/package=smoof>. R package version 1.2.
- [339] H. M. Botee and E. Bonabeau. **Evolving Ant Colony Optimization**. *Advances in Complex Systems*, 1:149–159, 1998.
- [340] M. Botte and A. Schöbel. **Dominance for multi-objective robust optimization concepts**. *European Journal of Operational Research*, 273(2):430–440, 2019.
- [341] 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.
- [342] 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.
- [343] P. F. Boulous, 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.
- [344] 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.



- [345] 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.
- [346] 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.
- [347] G. E. P. Box and N. R. Draper. *Response surfaces, mixtures, and ridge analyses*. John Wiley & Sons, 2007.
- [348] 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.
- [349] 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.
- [350] 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.
- [351] 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.
- [352] 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.
- [353] 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, NY, 1988.
- [354] 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.
- [355] 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.
- [356] J. Branke, T. Kaussler, and H. Schmeck. **Guidance in evolutionary multi-objective optimization**. *Advances in Engineering Software*, 32:499–507, 2001.
- [357] 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.
- [358] 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.



- [359] J. Branke, S. Greco, R. Słowiński, and P. Zielniewicz. **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.
- [360] 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.
- [361] 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.
- [362] 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.
- [363] 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.
- [364] 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.
- [365] 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.
- [366] 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.
- [367] 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.
- [368] 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.
- [369] 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.
- [370] L. Breiman. **Random Forests.** *Machine Learning*, 45(1):5–32, 2001. doi:10.1023/A:1010933404324.
- [371] 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.

- [372] 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.
- [373] 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.
- [374] 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.
- [375] 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.
- [376] 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.
- [377] 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.
- [378] 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.
- [379] 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.
- [380] E. Brochu, V. Cora, and N. de Freitas. **A Tutorial on Bayesian Optimization of Expensive Cost Functions, with Application to Active User Modeling and Hierarchical Reinforcement Learning**. *Arxiv preprint arXiv:1012.2599*, Dec. 2010. URL <https://arxiv.org/abs/1012.2599>.
- [381] D. Brockhoff. **A Bug in the Multiobjective Optimizer IBEA: Salutory Lessons for Code Release and a Performance Re-Assessment**. 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 187–201. Springer, Heidelberg, Germany, 2015. doi:10.1007/978-3-319-15934-8\_13.
- [382] 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.

- [383] 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](https://doi.org/10.1002/mcda.1502).  
Keywords: hypervolume, preference-based search, multi objective optimization, evolutionary algorithm.
- [384] 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](https://doi.org/10.4230/DagRep.8.1.33).  
Keywords: multiple criteria decision making, evolutionary multiobjective optimization.
- [385] 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.
- [386] 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.
- [387] A. Brum and M. Ritt. **Automatic Design of Heuristics for Minimizing the Makespan in Permutation Flow Shops**. In *Proceedings of the 2018 Congress on Evolutionary Computation (CEC 2018)*, pages 1–8, Piscataway, NJ, 2018. IEEE Press.
- [388] A. Brum and M. Ritt. **Automatic Algorithm Configuration for the Permutation Flow Shop Scheduling Problem Minimizing Total Completion Time**. In A. Liefooghe and M. López-Ibáñez, editors, *Proceedings of EvoCOP 2018 – 18th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 10782 of *Lecture Notes in Computer Science*, pages 85–100. Springer, Heidelberg, Germany, 2018. doi:[10.1007/978-3-319-77449-7](https://doi.org/10.1007/978-3-319-77449-7).
- [389] 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.
- [390] 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.
- [391] A. L. Buchsbaum and M. T. Goodrich. **Three-Dimensional Layers of Maxima**. *Algorithmica*, 39:275–289, 2004.
- [392] 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.
- [393] 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.
- [394] 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.
- [395] 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.
- [396] 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](https://doi.org/10.1016/0377-2217(84)90231-5).  
Keywords: 2-exchange delta evaluation for QAP.

- [397] R. E. Burkard, S. E. Karisch, and F. Rendl. **QAPLIB—a Quadratic Assignment Problem Library**. *Journal of Global Optimization*, 10(4):391–403, 1997.
- [398] 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.
- [399] E. K. Burke and Y. Bykov. **The Late Acceptance Hill-Climbing Heuristic**. Technical Report CSM-192, University of Stirling, 2012.
- [400] E. K. Burke and Y. Bykov. **The Late Acceptance Hill-Climbing Heuristic**. *European Journal of Operational Research*, 258(1):70–78, 2017.
- [401] E. K. Burke and G. Kendall, editors. *Search Methodologies: Introductory Tutorials in Optimization and Decision Support Techniques*. Springer, Boston, MA, 2005. doi:10.1007/0-387-28356-0.
- [402] 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.
- [403] 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.
- [404] 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.
- [405] 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.
- [406] 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.
- [407] 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.
- [408] D. C. C. et al., editors. *Applications of Evolutionary Computation, EvoApplications 2012*, volume 7248 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2012.
- [409] G. C. and S. M., editors. *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 10th International Conference, CPAIOR 2013, Yorktown Heights, NY, USA, May 18-22, 2013. Proceedings*, volume 7874 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2013.
- [410] 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.

- [411] 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.
- [412] 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.
- [413] 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.
- [414] 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.
- [415] 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.
- [416] 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.
- [417] L. Caires, G. F. Italiano, L. Monteiro, C. Palamidessi, and M. Yung, editors. *Proceedings of the 32nd International Colloquium on Automata, Languages and Programming, ICALP 2005*, volume 3580 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2005.
- [418] 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.
- [419] 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*, pages 302–314. Springer, Heidelberg, Germany, 2018.
- [420] 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.
- [421] 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.
- [422] F. Campelo and E. F. Wanner. **Sample size calculations for the experimental comparison of multiple algorithms on multiple problem instances**. *Journal of Heuristics*, 2020. doi:10.1007/s10732-020-09454-w.
- [423] F. Campelo, A. R. Trindade, and M. López-Ibáñez. **Pseudoreplication in Racing Methods for Tuning Metaheuristics**. In preparation, 2017.
- [424] 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.



- [425] E. Cantú-Paz. *Efficient and Accurate Parallel Genetic Algorithms*. Kluwer Academic Publishers, Boston, MA, 2000.
- [426] 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.
- [427] 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.
- [428] G. Caporossi. **Variable Neighborhood Search for Extremal Vertices : The AutoGraphX-III System**. *Computers & Operations Research*, 78:431–438, 2017.
- [429] I. Caragiannis, A. D. Procaccia, and N. Shah. **When Do Noisy Votes Reveal the Truth?** In M. J. Kearns, R. P. McAfee, and É. Tardos, editors, *Proceedings of the Fourteenth ACM Conference on Electronic Commerce*, pages 143–160, New York, NY, 2013. ACM Press. doi:10.1145/2482540.2482570.  
*Keywords:* computer social choice, mallows model, sample complexity.
- [430] 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.
- [431] J. Carlier. **The One-machine Sequencing Problem**. *European Journal of Operational Research*, 11(1):42–47, 1982.
- [432] W. B. Carlton and J. W. Barnes. **Solving the traveling-salesman problem with time windows using tabu search**. *IIE Transactions*, 28:617–629, 1996.
- [433] R. Carnell. *lhs: Latin Hypercube Samples*, 2016. URL <http://r-forge.r-project.org/projects/lhs/>. R package version 0.14.
- [434] Y. Caseau and F. Laburthe. **Heuristics for large constrained vehicle routing problems**. *Journal of Heuristics*, 5(3):281–303, 1999.
- [435] 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.
- [436] M. Caserta and S. Voß, editors. *Proceedings of MIC 2009, the 8th Metaheuristics International Conference*, Hamburg, Germany, 2010. University of Hamburg.
- [437] 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.
- [438] M. Cattolico et al., editors. *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2006*. ACM Press, New York, NY, 2006.
- [439] CCIE. *Proceedings of the 2010 International Conference on Computing, Control and Industrial Engineering*, Los Alamitos, CA, 2010. IEEE Computer Society Press.
- [440] J. Ceberio, E. Irurozki, A. Mendiburu, and J. A. Lozano. **A distance-based ranking model estimation of distribution algorithm for the flowshop scheduling problem**. *IEEE Transactions on Evolutionary Computation*, 18(2):286–300, 2014. doi:10.1109/TEVC.2013.2260548.  
*Keywords:* Estimation of distribution algorithms, Generalized Mallows model, Permutation flowshop scheduling problem, Permutations-based optimization problems.



- [441] J. Ceberio, A. Mendiburu, and J. A. Lozano. **Kernels of Mallows Models for Solving Permutation-based Problems.** In S. Silva and A. I. Esparcia-Alcázar, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2015*, pages 505–512. ACM Press, New York, NY, 2015.
- [442] E. Çela. *The Quadratic Assignment Problem: Theory and Algorithms.* Kluwer Academic Publishers, Dordrecht, The Netherlands, 1998.
- [443] 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.
- [444] 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.
- [445] S. Ceschia, A. Schaerf, and T. Stützle. **Local Search Techniques for a Routing-packing Problem.** *Computers and Industrial Engineering*, 66(4):1138–1149, 2013.
- [446] 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.
- [447] U. K. Chakraborty, editor. *Advances in differential evolution.* Springer, Heidelberg, Germany, 2008.
- [448] 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.
- [449] 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.
- [450] 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.
- [451] 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, NY, 1991. ASCE.
- [452] 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.
- [453] S. Chaudhuri and K. Deb. **An interactive evolutionary multi-objective optimization and decision making procedure.** *Applied Soft Computing*, 10(2):496–511, 2010.
- [454] P. C. Cheeseman, B. Kanefsky, and W. M. Taylor. **Where the Really Hard Problems Are.** In J. Mylopoulos and R. Reiter, editors, *Proceedings of the Twelfth International Joint Conference on Artificial Intelligence (IJCAI-91)*, pages 331–340. Morgan Kaufmann Publishers, 1995.
- [455] R. Chelouah and P. Siarry. **Tabu search applied to global optimization.** *European Journal of Operational Research*, 123(2):256–270, 2000.

- [456] 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](https://doi.org/10.1109/CIMCA.2005.1631422).
- [457] 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.
- [458] 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.
- [459] 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.
- [460] 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.
- [461] X. Chen and A. Stafylopatis, editors. *Computational Intelligence (SSCI), 2016 IEEE Symposium Series on*, 2016.
- [462] 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](https://doi.org/10.1016/j.ejor.2016.02.015).  
*Keywords:* irace.
- [463] 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](https://doi.org/10.1016/j.mcm.2006.11.035).
- [464] 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](https://doi.org/10.1080/03052159908941390).
- [465] 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. Uciniski, 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](https://doi.org/10.1007/978-3-319-00218-7_5).
- [466] T.-C. Chiang. **nsga3cpp: A C++ implementation of NSGA-III**. <http://web.ntnu.edu.tw/~tcchiang/publications/nsga3cpp/nsga3cpp.htm>, 2014.
- [467] M. Chiarandini. *Stochastic Local Search Methods for Highly Constrained Combinatorial Optimisation Problems*. PhD thesis, FB Informatik, TU Darmstadt, Germany, 2005.
- [468] 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](https://doi.org/10.1007/978-3-642-02538-9).  
*Annotation:* Preliminary version available as *Tech. Rep.* MF-2009-07-001 at the The Danish Mathematical Society.
- [469] 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](https://doi.org/10.1007/s10951-006-8495-8).  
*Keywords:* 2003 international timetabling competition, F-race.

- [470] M. Chica, O. Cordón, 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.
- [471] 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.
- [472] 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.
- [473] 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.
- [474] 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.
- [475] 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. Keywords: irace.
- [476] 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.
- [477] 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.
- [478] 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.
- [479] T. Chugh. *Handling expensive multiobjective optimization problems with evolutionary algorithms.* PhD thesis, University of Jyväskylä, 2017.
- [480] 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.
- [481] 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.
- [482] 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, Berlin, Germany, 2001. Springer. doi:10.1007/3-540-44808-X\_3.
- [483] J. F. Claerbout and M. Karrenbach. **Electronic documents give reproducible research a new meaning.** In *SEG Technical Program Expanded Abstracts 1992*, pages 601–604. Society of Exploration Geophysicists, 1992. doi:10.1190/1.1822162.  
*Annotation:* Proposed a reproducibility taxonomy, defined reproducibility and taxonomy.
- [484] 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.
- [485] M. Clerc and J. Kennedy. **Standard PSO 2011.** Particle Swarm Central, 2011. URL <http://www.particleswarm.info/>.
- [486] 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.
- [487] J. Climaco, editor. *Proceedings of the 13th International Conference on Multiple Criteria Decision Making (MCDM’97)*. Springer Verlag, 1997.
- [488] I. Cloete, K.-P. Wong, and M. Berthold, editors. *Proceedings of the 3rd International Conference on Machine Learning and Cybernetics*, 2004. IEEE Press.
- [489] J. J. Cochran, editor. *Wiley Encyclopedia of Operations Research and Management Science*. John Wiley & Sons, 2011. doi:10.1002/9780470400531.
- [490] A. Cockburn, P. Dragicevic, L. Besançon, and C. Gutwin. **Threats of a Replication Crisis in Empirical Computer Science.** *Communications of the ACM*, 63(8):70–79, July 2020. doi:10.1145/3360311.
- [491] 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.
- [492] H. Coelho, R. Studer, and M. Wooldridge, editors. *Proceedings of the 19th European Conference on Artificial Intelligence*. IOS Press, 2010.
- [493] 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.
- [494] 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.
- [495] 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.
- [496] C. A. Coello Coello. **Special Issue on Evolutionary Multiobjective Optimization.** *IEEE Transactions on Evolutionary Computation*, 7(2), 2003.
- [497] C. A. Coello Coello. **Evolutionary multi-objective optimization: a historical view of the field.** *IEEE Computational Intelligence Magazine*, 1(1):28–36, 2006.

- [498] 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.
- [499] 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.
- [500] 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.
- [501] 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).
- [502] 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.
- [503] C. A. Coello Coello, G. B. Lamont, and D. A. Van Veldhuizen. *Evolutionary Algorithms for Solving Multi-Objective Problems*. Springer, New York, NY, 2007.
- [504] 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.
- [505] 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.
- [506] 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.
- [507] 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.
- [508] P. R. Cohen. *Empirical Methods for Artificial Intelligence*. MIT PressCambridge, MA, 1995.
- [509] 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.
- [510] 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*, New York, NY, 2008. ACM Press.
- [511] H. Cohn and M. J. Fielding. **Simulated Annealing: Searching for an Optimal Temperature**. *SIAM Journal on Optimization*, 9(3):779–802, 1999.



- [512] 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.
- [513] 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.
- [514] 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.
- [515] 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 PressCambridge, MA, 1992.
- [516] 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.
- [517] 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.
- [518] 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.
- [519] D. T. Connolly. **An Improved Annealing Scheme for the QAP**. *European Journal of Operational Research*, 46(1):93–100, 1990.
- [520] W. J. Conover. *Practical Nonparametric Statistics*. John Wiley & Sons, New York, NY, 3rd edition, 1999.
- [521] 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.
- [522] 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.
- [523] W. J. Cook. **The Traveling Salesman Problem**. <http://www.math.uwaterloo.ca/tsp>, 2010. Version visited last on 15 April 2014.
- [524] W. J. Cook. *In Pursuit of the Traveling Salesman*. Princeton University Press, Princeton, NJ, 2012.
- [525] W. J. Cook. **Computing in Combinatorial Optimization**. In B. Steffen and G. Woeginger, editors, *Computing and Software Science: State of the Art and Perspectives*, volume 10000 of *Lecture Notes in Computer Science*, pages 27–47. Springer, Cham, 2019. doi:10.1007/978-3-319-91908-9\_3.

- [526] D. Coppersmith, L. K. Fleischer, and A. Rurda. **Ordering by Weighted Number of Wins Gives a Good Ranking for Weighted Tournaments.** *ACM Transactions on Algorithms*, 6(3):1–13, July 2010. doi:10.1145/1798596.1798608.  
Keywords: Approximation algorithms, Borda's method, feedback arc set problem, rank aggregation, tournaments.
- [527] J. Cordeau and M. Maischberger. **A Parallel Iterated Tabu Search Heuristic for Vehicle Routing Problems.** *Computers & Operations Research*, 39(9):2033–2050, 2012.
- [528] 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.
- [529] O. Cordon and S. Damas. **Image Registration with Iterated Local Search.** *Journal of Heuristics*, 12(1–2):73–94, 2006.
- [530] O. Cordon, 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.
- [531] O. Cordon, F. Herrera, and T. Stützle. **Special Issue on Ant Colony Optimization: Models and Applications.** *Mathware & Soft Computing*, 9(3):137–268, 2002.
- [532] 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.
- [533] 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.
- [534] 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. Supplementary material: <http://is.gd/evalopt>.
- [535] D. Corne, M. Dorigo, and F. Glover, editors. *New Ideas in Optimization*. McGraw Hill, London, UK, 1999.
- [536] 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.
- [537] 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.  
Keywords: PESA-II.
- [538] P. Corry and E. Kozan. **Ant Colony Optimisation for Machine Layout Problems.** *Computational Optimization and Applications*, 28(3):287–310, 2004.

- [539] 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).
- [540] 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).
- [541] 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).
- [542] A. D. Corte and K. Sörensen. **An Iterated Local Search Algorithm for Water Distribution Network Design Optimization.** *Networks*, 67(3):187–198, 2016.
- [543] 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).
- [544] 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>.
- [545] COSEAL. **COnfiguration and SElection of ALgorithms.** <http://www.coseal.net>, 2017.
- [546] D. Costa and A. Hertz. **Ants can color graphs.** *Journal of the Operational Research Society*, 48:295–305, 1997.
- [547] W. E. Costa, M. C. Goldbarg, and E. F. G. Goldbarg. **Hybridizing VNS and path-relinking on a particle swarm framework to minimize total flowtime.** *Expert Systems with Applications*, 39(18):13118–13126, 2012.
- [548] 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.
- [549] 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.
- [550] J. D. Cowan, G. Tesauro, and J. Alspector, editors. *Advances in Neural Information Processing Systems*, volume 6. Morgan Kaufmann Publishers, San Francisco, CA, 1994.
- [551] 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.
- [552] I. B. Crabtree. **Resource Scheduling: Comparing Simulated Annealing with Constraint Programming.** *BT Technology Journal*, 13(1):121–127, 1995.
- [553] M. J. Crawley. *The R Book*. Wiley, 2nd edition, 2012.
- [554] D. E. Critchlow, M. A. Fligner, and J. S. Verducci. **Probability Models on Rankings.** *Journal of Mathematical Psychology*, 35:294–318, 1991.
- [555] G. A. Croes. **A Method for Solving Traveling Salesman Problems.** *Operations Research*, 6:791–812, 1958.

- [556] 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.
- [557] 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.
- [558] 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.
- [559] 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.
- [560] 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.
- [561] 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.
- [562] 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.
- [563] 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.
- [564] 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).
- [565] 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.
- [566] 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. on CD-ROM.
- [567] 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.   
Keywords: irace; theory.
- [568] N. Dang Thi Thanh. *Data analytics for algorithm design*. PhD thesis, KU Leuven, Belgium, 2018.   
Annotation: Supervised by Patrick De Causmaecker.

- [569] 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.
- [570] 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.
- [571] 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.
- [572] G. B. Dantzig and P. Wolfe. **Decomposition Principle for Linear Programs**. *Operations Research*, 8(1):101–111, 1960.
- [573] 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*, New York, NY, 2009. ACM Press.
- [574] 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.
- [575] 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.
- [576] 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.
- [577] 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.
- [578] 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.
- [579] 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.
- [580] 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.
- [581] J.-C. de Borda. **Mémoire sur les Élections au Scrutin**. *Histoire de l’Académie Royal des Sciences*, 1781.  
*Keywords:* ranking.
- [582] A. R. R. de Freitas, P. J. Fleming, and F. G. Guimarães. **Aggregation trees for visualization and dimension reduction in many-objective optimization**. *Information Sciences*, 298: 288–314, 2015.
- [583] K. A. De Jong. *Evolutionary computation: a unified approach*. MIT Press, Cambridge, MA, 2006.



- [584] 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.
- [585] 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](https://doi.org/10.1155/2015/167031).  
*Keywords:* F-race.
- [586] 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.
- [587] 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](https://doi.org/10.1007/978-3-319-55696-3_16).
- [588] 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.
- [589] M. De Souza and M. Ritt. **An Automatically Designed Recombination Heuristic for the Test-Assignment Problem.** In *Proceedings of the 2018 Congress on Evolutionary Computation (CEC 2018)*, pages 1–8, Piscataway, NJ, 2018. IEEE Press.
- [590] 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.
- [591] A. Dean and D. Voss. *Design and Analysis of Experiments*. Springer, London, UK, 1999. doi:[10.1007/b97673](https://doi.org/10.1007/b97673).
- [592] 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.
- [593] 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.
- [594] 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](https://doi.org/10.1016/S0045-7825(99)00389-8).
- [595] K. Deb. *Multi-Objective Optimization Using Evolutionary Algorithms*. Wiley, Chichester, UK, 2001.
- [596] K. Deb. **Multi-objective optimization.** In E. K. Burke and G. Kendall, editors, *Search Methodologies*, pages 403–449. Springer, Boston, MA, 2005. doi:[10.1007/0-387-28356-0](https://doi.org/10.1007/0-387-28356-0).

- [597] 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.
- [598] K. Deb and R. B. Agrawal. **Simulated binary crossover for continuous search spaces.** *Complex Systems*, 9(2):115–148, 1995.  
*Keywords:* SBX.
- [599] K. Deb and S. Agrawal. **A Niched-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.
- [600] 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.
- [601] K. Deb and S. Jain. **Multi-Speed Gearbox Design Using Multi-Objective Evolutionary Algorithms.** Technical Report 2002001, KanGAL, Feb. 2002.
- [602] 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.  
*Annotation:* Proposed NSGA-III.
- [603] 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.
- [604] 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.
- [605] 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.
- [606] 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.
- [607] 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 [609].
- [608] 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.

- [609] 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.
- [610] 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.
- [611] 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.
- [612] 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.
- [613] 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.
- [614] 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.
- [615] 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.
- [616] 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.
- [617] 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.
- [618] V. Dekhtyarenko. **Verification of weight coefficients in multicriteria optimization problems**. *Computer-Aided Design*, 13(6):339–344, 1981.
- [619] R. F. Dell and M. H. Karwan. **An interactive MCDM weight space reduction method utilizing a Tchebycheff utility function**. *Naval Research Logistics*, 37(2):263–277, 1990.
- [620] 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.
- [621] M. Dell’Amico and M. Trubian. **Applying Tabu Search to the Job Shop Scheduling Problem**. *Annals of Operations Research*, 41:231–252, 1993.
- [622] 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.

- [623] 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.
- [624] 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.
- [625] M. Delorme, M. Iori, and S. Martello. **BPPLIB: a library for bin packing and cutting stock problems.** *Optimization Letters*, 12(2):235–250, 2018.
- [626] 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?
- [627] 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.
- [628] M. L. den Besten. *Simple Metaheuristics for Scheduling.* PhD thesis, FB Informatik, TU Darmstadt, Germany, 2004. URL <http://tuprints.ulb.tu-darmstadt.de/516/>.
- [629] 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.
- [630] 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.
- [631] 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.
- [632] 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.
- [633] 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.
- [634] 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.
- [635] 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.
- [636] 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.

- [637] K. development team. **Keras**. <https://keras.io>, 2017.
- [638] S. Dewez. *On the toll setting problem*. PhD thesis, Faculté de Sciences, Université Libre de Bruxelles, 2014.  
*Annotation:* Supervised by Dr. Martine Labbé.
- [639] 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.
- [640] 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*. ACM Press, New York, NY, 2013.
- [641] G. A. Di Caro and M. Dorigo. **AntNet: Distributed Stigmergetic Control for Communications Networks**. *Journal of Artificial Intelligence Research*, 9:317–365, 1998.
- [642] 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.
- [643] 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.  
*Keywords:* software engineering, local search, easylocal.
- [644] 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.
- [645] L. Di Gaspero, A. Schaerf, and T. Stützle, editors. *Proceedings of MIC 2011, the 9th Metaheuristics International Conference*, 2011.
- [646] 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](https://doi.org/10.1007/978-3-642-40627-0_56).  
*Keywords:* F-race.
- [647] 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](https://doi.org/10.1007/978-3-642-38516-2_16).  
*Keywords:* F-race.
- [648] 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.
- [649] 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.
- [650] 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.



- [651] J. E. Diaz and M. López-Ibáñez. **Incorporating Decision-Maker’s Preferences into the Automatic Configuration of Bi-Objective Optimisation Algorithms.** *European Journal of Operational Research*, 2020. doi:10.1016/j.ejor.2020.07.059. Supplementary material: <http://doi.org/10.5281/zenodo.3749288>.
- [652] 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.
- [653] 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.  
*Keywords:* Genetic algorithms, Combinatorial optimization, Production planning, Simulation-based optimization, Uncertainty modelling.
- [654] 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.
- [655] 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.
- [656] 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.
- [657] 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.
- [658] 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.
- [659] 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.
- [660] 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.
- [661] 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.
- [662] 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.
- [663] K. F. Doerner, D. Merkle, and T. Stützle. **Special issue on Ant Colony Optimization.** *Swarm Intelligence*, 3(1), 2009.
- [664] B. Doerr and F. Neumann, editors. *Theory of Evolutionary Computation.* Springer International Publishing, 2020. doi:10.1007/978-3-030-29414-4.

- [665] 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.
- [666] J.-P. Doignon, A. Pekeč, and M. Regenwetter. **The repeated insertion model for rankings: Missing link between two subset choice models**. *Psychometrika*, 69(1):33–54, Mar. 2004. doi:[10.1007/bf02295838](https://doi.org/10.1007/bf02295838).
- [667] E. D. Dolan and J. J. Moré. **Benchmarking optimization software with performance profiles**. *Mathematical Programming*, 91(2):201–213, 2002.  
*Keywords:* performance profiles; convergence.
- [668] 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>.
- [669] 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.
- [670] 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.
- [671] 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.
- [672] M. Dorigo. *Optimization, Learning and Natural Algorithms*. PhD thesis, Dipartimento di Elettronica, Politecnico di Milano, Italy, 1992. In Italian.
- [673] M. Dorigo. **Ant Colony Optimization**. *Scholarpedia*, 2(3):1461, 2007. doi:[10.4249/scholarpedia.1461](https://doi.org/10.4249/scholarpedia.1461).
- [674] M. Dorigo. **Swarm intelligence: A few things you need to know if you want to publish in this journal**. *Swarm Intelligence*, Nov. 2016. URL [https://static.springer.com/sgw/documents/1593723/application/pdf/Additional\\_submission\\_instructions.pdf](https://static.springer.com/sgw/documents/1593723/application/pdf/Additional_submission_instructions.pdf).
- [675] M. Dorigo and C. Blum. **Ant colony optimization theory: A survey**. *Theoretical Computer Science*, 344(2-3):243–278, 2005.
- [676] 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.
- [677] M. Dorigo and L. M. Gambardella. **Ant Colony System**. Technical Report IRIDIA/96-05, IRIDIA, Université Libre de Bruxelles, Belgium, 1996.
- [678] 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).
- [679] 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.
- [680] 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.

- [681] M. Dorigo and T. Stützle. *Ant Colony Optimization*. MIT Press, Cambridge, MA, 2004.
- [682] 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.
- [683] 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.
- [684] M. Dorigo, V. Maniezzo, and A. Coloni. **Ant System: Optimization by a Colony of Cooperating Agents**. *IEEE Transactions on Systems, Man, and Cybernetics – Part B*, 26(1): 29–41, 1996.
- [685] M. Dorigo, G. A. Di Caro, and L. M. Gambardella. **Ant Algorithms for Discrete Optimization**. *Artificial Life*, 5(2):137–172, 1999.
- [686] M. Dorigo, T. Stützle, and G. A. Di Caro. **Special Issue on “Ant Algorithms”**. *Future Generation Computer Systems*, 16(8), 2000.
- [687] 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.
- [688] 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.
- [689] 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.
- [690] 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.
- [691] 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.
- [692] 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.
- [693] 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.
- [694] 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.
- [695] 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.
- [696] 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.

- [697] 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.
- [698] 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.
- [699] M. Dorigo et al., editors. *Swarm Intelligence, 8th International Conference, ANTS 2012*, volume 7461 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2012.
- [700] M. Dorigo et al., editors. *Swarm Intelligence, 9th International Conference, ANTS 2014*, volume 8667 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 2014.
- [701] M. Dounpos and C. Zopounidis. **Preference disaggregation and statistical learning for multicriteria decision support: A review**. *European Journal of Operational Research*, 209(3):203–214, 2011.
- [702] E. Dovgan, T. Tušar, and B. Filipič. **Parameter tuning in an evolutionary algorithm for commodity transportation optimization**. *Evolutionary Computation*, pages 1–8, 2010.
- [703] 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.
- [704] 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.
- [705] J. Dréo and P. Siarry. **Continuous interacting ant colony algorithm based on dense heterarchy**. *Future Generation Computer Systems*, 20(5):841–856, 2004.
- [706] 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.
- [707] M. M. Drugan and D. Thierens. **Stochastic Pareto local search: Pareto neighbourhood exploration and perturbation strategies**. *Journal of Heuristics*, 18(5):727–766, 2012.
- [708] 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.
- [709] 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.
- [710] 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.
- [711] 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.

- [712] 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.
- [713] 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.
- [714] 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.
- [715] 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 [714].
- [716] 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.
- [717] 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.
- [718] 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.
- [719] 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 [718].
- [720] 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 [724].
- [721] 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 [723].
- [722] 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.
- [723] 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.



- [724] 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/>.
- [725] 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.
- [726] 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.
- [727] 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.
- [728] 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>.
- [729] J. Dubois-Lacoste, M. López-Ibáñez, and T. Stützle. **Supplementary material: Anytime Pareto Local Search.** <http://iridia.ulb.ac.be/supp/IridiaSupp2013-003>, 2013.
- [730] 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.
- [731] 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/>.
- [732] 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.
- [733] 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>.
- [734] G. Dueck. **New Optimization Heuristics: the Great Deluge Algorithm and the Record-To-Record Travel.** *Journal of Computational Physics*, 104(1):86–92, 1993.
- [735] 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.
- [736] 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).

- [737] 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.
- [738] R. R. P. R. Duivenvoorden, F. Berkenkamp, N. Carion, A. Krause, and A. P. Schoellig. **Constrained Bayesian Optimization with Particle Swarms for Safe Adaptive Controller Tuning.** *IFAC-PapersOnLine*, 50(1):11800–11807, 2017. doi:[10.1016/j.ifacol.2017.08.1991](https://doi.org/10.1016/j.ifacol.2017.08.1991).  
*Keywords:* Adaptive Control, Constrained Bayesian Optimization, Safety, Gaussian Process, Particle Swarm Optimization, Policy Search, Reinforcement learning.  
*Annotation:* 20th IFAC World Congress.
- [739] 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.
- [740] 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.
- [741] 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.
- [742] 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.
- [743] C. Dwork, R. Kumar, M. Naor, and D. Sivakumar. **Rank aggregation methods for the Web.** In V. Y. Shen, N. Saito, M. R. Lyu, and M. E. Zurko, editors, *Proceedings of the Tenth International World Wide Web Conference, WWW 10*, pages 613–622. ACM Press, New York, NY, 2001. ISBN 1-58113-348-0. doi:[10.1145/371920.372165](https://doi.org/10.1145/371920.372165).  
*Keywords:* Kemeny ranking,multi-word queries,rank aggregation,ranking functions,spam.
- [744] J. G. Dy and A. Krause, editors. *Proceedings of the 35th International Conference on Machine Learning, ICML 2018, Stockholmsmässan, Stockholm, Sweden, July 10-15, 2018*, volume 80 of *Proceedings of Machine Learning Research*, 2018. PMLR.
- [745] 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.
- [746] 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.
- [747] ECML PKDD. *Machine Learning and Knowledge Discovery in Databases - European Conference, ECML PKDD 2015, Porto, Portugal, September 7-11, 2015, Proceedings, Part III*, volume 9286 of *Lecture Notes in Computer Science*, 2015. Springer.
- [748] 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.
- [749] R. W. Eglese. **Simulated Annealing: a Tool for Operational Research.** *European Journal of Operational Research*, 46(3):271–281, 1990.

- [750] M. Ehrgott. *Multicriteria Optimization*, volume 491 of *Lecture Notes in Economics and Mathematical Systems*. Springer, Berlin, Germany, 2000.
- [751] M. Ehrgott. *Multicriteria Optimization*. Springer, Berlin, Germany, 2nd edition, 2005. doi:10.1007/3-540-27659-9.
- [752] M. Ehrgott. **A discussion of scalarization techniques for multiple objective integer programming**. *Annals of Operations Research*, 147(1):343–360, 2006.
- [753] M. Ehrgott and X. Gandibleux. **Approximative Solution Methods for Combinatorial Multicriteria Optimization**. *TOP*, 12(1):1–88, 2004.
- [754] 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.
- [755] 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.
- [756] 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.
- [757] 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.
- [758] A. E. Eiben and J. E. Smith. *Introduction to Evolutionary Computing*. Springer, 2003. ISBN 3540401849.
- [759] A. E. Eiben and J. E. Smith. *Introduction to Evolutionary Computing*. Natural Computing Series. Springer, 2nd edition, 2007.
- [760] 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.
- [761] A. E. Eiben, R. Hinterding, and Z. Michalewicz. **Parameter Control in Evolutionary Algorithms**. *IEEE Transactions on Evolutionary Computation*, 3(2):124–141, 1999.
- [762] 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.
- [763] 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.
- [764] 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.
- [765] 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.

- [766] J. L. Elman. **Distributed representations, simple recurrent networks, and grammatical structure.** *Machine Learning*, 7(2-3):195–225, 1991.
- [767] V. A. Emelichev and V. A. Perepelitsa. **Complexity of Vector Optimization Problems on Graphs.** *Optimization*, 22(6):906–918, 1991. doi:[10.1080/02331939108843732](https://doi.org/10.1080/02331939108843732).
- [768] 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.
- [769] 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](https://doi.org/10.1007/978-3-642-19893-9_9).
- [770] A. Engau and M. M. Wiecek. **Interactive coordination of objective decompositions in multiobjective programming.** *Management Science*, 54(7):1350–1363, 2008.
- [771] 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.
- [772] 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](https://doi.org/10.1109/CEC.2011.5949963).
- [773] D. Eriksson, M. Pearce, J. Gardner, R. D. Turner, and M. Poloczek. **Scalable Global Optimization via Local Bayesian Optimization.** 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 5496–5507, 2019. Annotation: Arxiv: <https://arxiv.org/abs/1910.01739>.
- [774] 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.
- [775] 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>.
- [776] 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>.
- [777] 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.
- [778] 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.

- [779] 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, 1993. ISBN 1-55860-263-1.
- [780] 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.
- [781] 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.
- [782] I. Essafi, Y. Mati, and S. Dauzère-Pèrès. **A Genetic Local Search Algorithm for Minimizing Total Weighted Tardiness in the Job-shop Scheduling Problem**. *Computers & Operations Research*, 35(8):2599–2616, 2008.
- [783] 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.
- [784] S. Falkner, M. T. Lindauer, and F. Hutter. **SpySMAC: Automated configuration and performance analysis of SAT solvers**. In M. Heule and S. Weaver, editors, *Theory and Applications of Satisfiability Testing – SAT 2015*, volume 9340 of *Lecture Notes in Computer Science*, pages 215–222. Springer, Cham, 2015. doi:10.1007/978-3-319-24318-4\_16.
- [785] W. Fan and A. Bifet. **Mining big data: current status, and forecast to the future**. *ACM SIGKDD Explorations Newsletter*, 14(2):1–5, 2013.
- [786] 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.
- [787] D. Fanelli. **Negative results are disappearing from most disciplines and countries**. *Scientometrics*, 90(3):891–904, 2012. doi:10.1007/s11192-011-0494-7.
- [788] 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.
- [789] 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.
- [790] 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.
- [791] 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.
- [792] 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.
- [793] D. Favaretto, E. Moretti, and P. Pellegrini. **On the explorative behavior of 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.



- [794] 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.
- [795] C. Fawcett and H. H. Hoos. **Analysing Differences Between Algorithm Configurations through Ablation**. *Journal of Heuristics*, 22(4):431–458, 2016.
- [796] 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.
- [797] 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.
- [798] T. A. Feo and M. G. C. Resende. **Greedy Randomized Adaptive Search Procedures**. *Journal of Global Optimization*, 6(2):109–113, 1995.
- [799] 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.
- [800] 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.
- [801] 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.
- [802] 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.
- [803] 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.
- [804] 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.
- [805] V. Fernandez-Viagas and J. M. Framiñán. **A Beam-search-based Constructive Heuristic for the PFSP to Minimise Total Flowtime**. *Computers & Operations Research*, 81:167–177, 2017.
- [806] 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.
- [807] 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.

- [808] 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.
- [809] 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.
- [810] 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.
- [811] 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.
- [812] 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.
- [813] 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. Supplementary material: <https://github.com/MLopez-Ibanez/irace-sumo>.
- [814] 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.
- [815] 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>.
- [816] Á. Fialho. *Adaptive operator selection for optimization*. PhD thesis, Université Paris Sud-Paris XI, 2010.
- [817] 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.
- [818] 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.
- [819] 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.
- [820] 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.

- [821] M. J. Fielding. **Simulated Annealing with an Optimal Fixed Temperature**. *SIAM Journal on Optimization*, 11(2):289–307, 2000.
- [822] J. E. Fieldsend and R. M. Everson. **Visualising high-dimensional Pareto relationships in two-dimensional scatterplots**. 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 558–572. Springer, Heidelberg, Germany, 2013. ISBN 978-3-642-37139-4.
- [823] 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.
- [824] J. R. Figueira, S. Greco, and M. Ehrgott, editors. *Multiple Criteria Decision Analysis, State of the Art Surveys*. Springer, 2005.
- [825] 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](https://doi.org/10.1002/mcda.1574).
- [826] R. Fikes and W. G. Lehnert, editors. *Proceedings of the 11th National Conference on Artificial Intelligence*, 1993. AAAI Press/MIT Press, Menlo Park, CA.
- [827] J. Filipe and J. Kacprzyk, editors. *Proceedings of the International Joint Conference on Computational Intelligence (IJCCI-2010)*, 2010. SciTePress.
- [828] 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=OZLsAAACAAJ>.
- [829] 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.
- [830] M. Fischetti and A. Lodi. **Local Branching**. *Mathematical Programming Series B*, 98:23–47, 2003.
- [831] M. Fischetti and M. Monaci. **Exploiting Erraticism in Search**. *Operations Research*, 62(1):114–122, 2014. doi:[10.1287/opre.2013.1231](https://doi.org/10.1287/opre.2013.1231).  
Annotation: <http://mat.tepper.cmu.edu/blog/?p=1695>.
- [832] M. Fischetti, M. Monaci, and D. Salvagnin. **Three Ideas for the Quadratic Assignment Problem**. *Operations Research*, 60(4):954–964, 2012.
- [833] 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.
- [834] 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.

- [835] 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.
- [836] 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.
- [837] 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.
- [838] J. Fliege. **The effects of adding objectives to an optimisation problem on the solution set.** *Operations Research Letters*, 35(6):782–790, 2007.
- [839] M. A. Fligner and J. S. Verducci. **Distance Based Ranking Models.** *Journal of the Royal Statistical Society: Series B (Methodological)*, 48(3):359–369, 1986. doi:[10.1111/j.2517-6161.1986.tb01420.x](https://doi.org/10.1111/j.2517-6161.1986.tb01420.x).  
*Keywords:* Mallows model, ranking, probabilistic models.
- [840] M. M. Flood. **The Travelling Salesman Problem.** *Operations Research*, 4:61–75, 1956.
- [841] 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](https://doi.org/10.1371/journal.pbio.1000292).
- [842] 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.
- [843] D. Floreano and J. Urzelai. **Evolutionary robots with on-line self-organization and behavioral fitness.** *Neural Networks*, 13(4-5):431–443, 2000.
- [844] 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.
- [845] F. Focacci, A. Lodi, and M. Milano. **A Hybrid Exact Algorithm for the TSPTW.** *INFORMS Journal on Computing*, 14:403–417, 2002.
- [846] 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, Berlin, Germany, 1995.
- [847] D. B. Fogel. *Evolutionary Computation. Toward a New Philosophy of Machine Intelligence*. IEEE Press, 1995.
- [848] D. B. Fogel, A. J. Owens, and M. J. Walsh. *Artificial Intelligence Through Simulated Evolution*. John Wiley & Sons, 1966.
- [849] D. B. Fogel et al., editors. *Proceedings of the 2002 World Congress on Computational Intelligence (WCCI 2002)*, Piscataway, NJ, 2002. IEEE Press.

- [850] 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.
- [851] 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.
- [852] 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.
- [853] 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.
- [854] 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.
- [855] 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.
- [856] 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.
- [857] 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.
- [858] J. R. Fonseca Cacho and K. Taghva. **The State of Reproducible Research in Computer Science**. In S. Latifi, editor, *17th International Conference on Information Technology-New Generations (ITNG 2020)*, Advances in Intelligent Systems and Computing, pages 519–524. Springer International Publishing, 2020. doi:10.1007/978-3-030-43020-7\_68.  
*Keywords:* Docker, Improving transparency, OCR, Open science, Replicability, Reproducibility.
- [859] 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.
- [860] A. I. J. Forrester and A. J. Keane. **Recent advances in surrogate-based optimization**. *Progress in Aerospace Sciences*, 45(1-3):50–79, 2009. doi:10.1016/j.paerosci.2008.11.001.  
*Keywords:* Kriging; Gaussian Process; EGO; Design of Experiments.
- [861] 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.



- [862] R. Fourer, D. M. Gay, and B. W. Kernighan. *AMPL: A Modeling Language for Mathematical Programming*. Duxbury, 2nd edition, 2002.
- [863] B. L. Fox. **Uniting probabilistic methods for optimization**. In *Proceedings of the 24th conference on Winter simulation*, pages 500–505. ACM, 1992.
- [864] B. L. Fox. **Integrating and accelerating tabu search, simulated annealing, and genetic algorithms**. *Annals of Operations Research*, 41(2):47–67, 1993.
- [865] 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.
- [866] 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*, 2010. AAAI Press.
- [867] 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.
- [868] J. M. Framiñán, R. Leisten, and R. Ruiz. *Manufacturing Scheduling Systems: An Integrated View on Models, Methods, and Tools*. Springer, New York, NY, 2014.
- [869] 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.
- [870] G. Francesca, M. Brambilla, A. Brutschy, L. Garattoni, R. Miletitch, G. Podevijn, A. Reina, T. Soleymani, M. Salvato, 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.
- [871] 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.
- [872] A. Franzin and T. Stützle. **Comparison of Acceptance Criteria in Randomized Local Searches**. 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 16–29. Springer, Heidelberg, Germany, 2017.
- [873] A. Franzin and T. Stützle. **Revisiting Simulated Annealing: a Component-Based Analysis: Supplementaty Material**. <http://iridia.ulb.ac.be/supp/IridiaSupp2018-001>, 2018.
- [874] 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>.
- [875] 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.
- [876] 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>.

- [877] 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.
- [878] C. B. Fraser. *Subsequences and Supersequences of Strings*. PhD thesis, University of Glasgow, 1995.
- [879] P. I. Frazier. **A Tutorial on Bayesian Optimization.** *Arxiv preprint arXiv:1807.02811*, 2018. URL <http://arxiv.org/abs/1807.02811>.
- [880] 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.
- [881] 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.
- [882] 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.
- [883] 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.
- [884] 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.
- [885] 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.
- [886] 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.
- [887] 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.  
*Keywords:* combinatorial optimization, heavy-tailed mutation, single-objective optimization, experiments-motivated theory, irace.
- [888] 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.
- [889] 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”.

- [890] 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.
- [891] 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.
- [892] D. Fudenberg and J. Tirole. *Game Theory*. MIT PressCambridge, MA, 1983.
- [893] 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.
- [894] 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.
- [895] 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.
- [896] 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.
- [897] N. E. Furlong, E. A. Lovelace, and K. L. Lovelace. *Research Methods and Statistics: An Integrated Approach*. Harcourt College Publishers, 2000.
- [898] J. Fürnkranz and T. Joachims, editors. *Proceedings of the 27th international conference on machine learning (ICML-10)*, New York, NY, 2010. ACM Press.
- [899] J. Fürnkranz, T. Scheffer, and M. Spiliopoulou, editors. *17th European Conference on Machine Learning, Berlin, Germany, September 18-22, 2006 Proceedings*, volume 4212 of *Lecture Notes in Computer Science*, 2006. ISBN 978-3-540-46056-5.
- [900] 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.
- [901] 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.
- [902] 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.
- [903] 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.
- [904] P. Galinier and J.-K. Hao. **Hybrid evolutionary algorithms for graph coloring**. *Journal of Combinatorial Optimization*, 3(4):379–397, 1999.

- [905] 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.
- [906] 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.
- [907] 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.
- [908] 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.
- [909] 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](https://doi.org/10.1016/j.ejor.2012.02.038).
- [910] 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.
- [911] X. Gandibleux, A. Jaskiewicz, A. Fréville, and R. Słowiński. **Special Issue on Multiple Objective Metaheuristics.** *Journal of Heuristics*, 6(3), 2000.
- [912] 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.
- [913] 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.
- [914] 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.
- [915] H. Gao, H. Nie, and K. Li. **Visualisation of Pareto Front Approximation: A Short Survey and Empirical Comparisons.** In *Proceedings of the 2019 Congress on Evolutionary Computation (CEC 2019)*, pages 1750–1757, Piscataway, NJ, 2019. IEEE Press. [doi:10.1109/CEC.2019.8790298](https://doi.org/10.1109/CEC.2019.8790298).
- [916] H. Gao, H. Nie, and K. Li. **Visualisation of Pareto Front Approximation: A Short Survey and Empirical Comparisons.** *Arxiv preprint arXiv:1903.01768*, 2019.
- [917] 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](https://doi.org/10.1016/j.asoc.2016.07.029).  
*Keywords:* harmony search algorithm, traffic light scheduling.

- [918] J. García and F. Fernández. **A comprehensive survey on safe reinforcement learning.** *Journal of Machine Learning Research*, 16(1):1437–1480, 2015.
- [919] 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.
- [920] 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.
- [921] 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.
- [922] 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.
- [923] 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.
- [924] 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.
- [925] 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.
- [926] M. R. Garey and D. S. Johnson. *Computers and Intractability: A Guide to the Theory of NP-Completeness.* Freeman & Co, San Francisco, CA, 1979.
- [927] M. R. Garey, D. S. Johnson, and R. Sethi. **The Complexity of Flowshop and Jobshop Scheduling.** *Mathematics of Operations Research*, 1:117–129, 1976.
- [928] 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.
- [929] 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.
- [930] 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.
- [931] 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.



- [932] 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.
- [933] 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.
- [934] P. Geibel. **Reinforcement Learning for MDPs with Constraints**. In J. Fürnkranz, T. Scheffer, and M. Spiliopoulou, editors, *Machine Learning: ECML 2006*, volume 4212 of *Lecture Notes in Computer Science*, pages 646–653, 2006. ISBN 978-3-540-46056-5. doi:10.1007/11871842\_63.  
Keywords: Safe RL.
- [935] 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.
- [936] 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.
- [937] 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.
- [938] 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.
- [939] 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, 2nd edition, 2010.
- [940] M. Gendreau and J.-Y. Potvin, editors. *Handbook of Metaheuristics*, volume 146 of *International Series in Operations Research & Management Science*. Springer, New York, NY, 2nd edition, 2010.
- [941] M. Gendreau and J.-Y. Potvin, editors. *Handbook of Metaheuristics*, volume 272 of *International Series in Operations Research & Management Science*. Springer, 2019.
- [942] 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.
- [943] 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.
- [944] 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.
- [945] 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.

- [946] 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.
- [947] R. Genuer, J.-M. Poggi, and C. Tuleau-Malot. **Variable selection using random forests**. *Pattern Recognition Letters*, 31(14):2225–2236, 2010.
- [948] 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.
- [949] 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.
- [950] S. Ghemawat, H. Gobioff, and S.-T. Leung. **The Google File System**. *SIGOPS Oper. Syst. Rev.*, 37(5):29–43, 2003.
- [951] 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.
- [952] 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.
- [953] 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.
- [954] 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.
- [955] F. Glover. **Heuristics for Integer Programming Using Surrogate Constraints**. *Decision Sciences*, 8:156–166, 1977.
- [956] F. Glover. **Future Paths for Integer Programming and Links to Artificial Intelligence**. *Computers & Operations Research*, 13(5):533–549, 1986.
- [957] F. Glover. **Tabu Search – Part I**. *INFORMS Journal on Computing*, 1(3):190–206, 1989. doi:10.1287/ijoc.1.3.190.
- [958] F. Glover. **Tabu Search – Part II**. *INFORMS Journal on Computing*, 2(1):4–32, 1990.
- [959] 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.
- [960] F. Glover and G. Kochenberger, editors. *Handbook of Metaheuristics*. Kluwer Academic Publishers, Norwell, MA, 2002.
- [961] 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.

- [962] F. Glover and M. Laguna. *Tabu Search*. Kluwer Academic Publishers, Boston, MA, USA, 1997.
- [963] F. Glover, G. A. Kochenberger, and B. Alidaee. **Adaptive Memory Tabu Search for Binary Quadratic Programs**. *Management Science*, 44(3):336–345, 1998.
- [964] 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.
- [965] GNU Project, Free Software Foundation. **GCC, the GNU Compiler Collection**. <https://www.gnu.org>, 1987.
- [966] M. Goerigk and A. Schöbel. **Recovery-to-optimality: A new two-stage approach to robustness with an application to aperiodic timetabling**. *Computers & Operations Research*, 52:1–15, 2014.
- [967] 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.
- [968] D. E. Goldberg. *Genetic Algorithms in Search, Optimization and Machine Learning*. Addison-Wesley, Boston, MA, USA, 1989.
- [969] D. E. Goldberg. **Probability matching, the magnitude of reinforcement, and classifier system bidding**. *Machine Learning*, 5(4):407–425, 1990.
- [970] 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.
- [971] 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](https://doi.org/10.1145/1830483.1830559).
- [972] E. D. Goodman, editor. *Proceedings of the 3rd Annual Conference on Genetic and Evolutionary Computation, GECCO 2001*. Morgan Kaufmann Publishers, San Francisco, CA, 2001.
- [973] Google. **TensorFlow**. <https://www.tensorflow.org>, 2017.
- [974] 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.
- [975] A. Gosavi. **Reinforcement Learning: A Tutorial Survey and Recent Advances**. *INFORMS Journal on Computing*, 21(2):178–192, 2009. [doi:10.1287/ijoc.1080.0305](https://doi.org/10.1287/ijoc.1080.0305).
- [976] 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.
- [977] 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.

- [978] 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.
- [979] 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.
- [980] 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.
- [981] 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.
- [982] 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.
- [983] 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.
- [984] 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.
- [985] 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.
- [986] 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.  
*Keywords:* multiple criteria decision making, evolutionary multiobjective optimization.
- [987] 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.
- [988] 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.
- [989] J. J. Grefenstette. **Optimization of Control Parameters for Genetic Algorithms.** *IEEE Transactions on Systems, Man, and Cybernetics*, 16(1):122–128, 1986.
- [990] 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.
- [991] 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.

- [992] P. Groves, B. Kayyali, D. Knott, and S. Van Kuiken. **The "big data" revolution in healthcare.** *McKinsey Quarterly*, 2, 2013.
- [993] 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.
- [994] 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.
- [995] 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.
- [996] 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.
- [997] 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.
- [998] 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.
- [999] 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.
- [1000] O. E. Gundersen, Y. Gil, and D. W. Aha. **On Reproducible AI: Towards Reproducible Research, Open Science, and Digital Scholarship in AI Publications.** *AI Magazine*, 39(3):56–68, Sept. 2018. doi:10.1609/aimag.v39i3.2816.  
*Annotation:* The reproducibility guidelines can be found here: [https://folk.idi.ntnu.no/odderik/reproducibility\\_guidelines.pdf](https://folk.idi.ntnu.no/odderik/reproducibility_guidelines.pdf) and a short how-to can be found here: [https://folk.idi.ntnu.no/odderik/reproducibility\\_guidelines\\_how\\_to.html](https://folk.idi.ntnu.no/odderik/reproducibility_guidelines_how_to.html).
- [1001] 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.
- [1002] 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.



- [1003] 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.
- [1004] 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.
- [1005] 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.
- [1006] J. N. D. Gupta. **Flowshop schedules with sequence dependent setup times**. *Journal of Operations Research Society of Japan*, 29:206 – 219, 1986.
- [1007] Gurobi. **Gurobi Optimizer**. <http://www.gurobi.com/products/gurobi-optimizer>, 2017.
- [1008] D. Gusfield. **Algorithms on Strings, Trees, and Sequences**. In *Computer Science and Computational Biology*. Cambridge University Press, 1997.
- [1009] G. Gutin and A. Punnen, editors. *The Traveling Salesman Problem and its Variations*. Kluwer Academic Publishers, Dordrecht, The Netherlands, 2002.
- [1010] W. J. Gutjahr. **A Graph-based Ant System and its Convergence**. *Future Generation Computer Systems*, 16(8):873–888, 2000.
- [1011] W. J. Gutjahr. **ACO Algorithms with Guaranteed Convergence to the Optimal Solution**. *Information Processing Letters*, 82(3):145–153, 2002.
- [1012] 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.
- [1013] 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.
- [1014] W. J. Gutjahr. **On the finite-time dynamics of ant colony optimization**. *Methodology and Computing in Applied Probability*, 8(1):105–133, 2006.
- [1015] W. J. Gutjahr. **Mathematical runtime analysis of ACO algorithms: survey on an emerging issue**. *Swarm Intelligence*, 1(1):59–79, 2007.
- [1016] W. J. Gutjahr. **First steps to the runtime complexity analysis of ant colony optimization**. *Computers & Operations Research*, 35(9):2711–2727, 2008.
- [1017] 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.
- [1018] 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.

- [1019] 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.
- [1020] 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.
- [1021] J. Hadar and W. R. Russell. **Rules for ordering uncertain prospects**. *The American Economic Review*, 59(1):25–34, 1969.  
*Keywords:* stochastic dominance.
- [1022] 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.
- [1023] D. Hadka and P. M. Reed. **Borg: An Auto-Adaptive Many-Objective Evolutionary Computing Framework**. *Evolutionary Computation*, 21(2):231–259, 2013.
- [1024] 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 2012)*, pages 1–10, Piscataway, NJ, 2012. IEEE Press.
- [1025] 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.
- [1026] B. Hajek. **Cooling Schedules for Optimal Annealing**. *Mathematics of Operations Research*, 13(2):311–329, 1988.
- [1027] B. Hajek and G. Sasaki. **Simulated annealing—to cool or not**. *System & Control Letters*, 12(5):443–447, 1989.
- [1028] P. Hajela and C.-Y. Lin. **Genetic search strategies in multicriterion optimal design**. *Structural Optimization*, 4(2):99–107, 1992.
- [1029] 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.
- [1030] H. W. Hamacher and G. Ruhe. **On spanning tree problems with multiple objectives**. *Annals of Operations Research*, 52(4):209–230, 1994.
- [1031] 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.
- [1032] Y. Hamadi, E. Monfroy, and F. Saubion, editors. *Autonomous Search*. Springer, Berlin, Germany, 2012.

- [1033] 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.
- [1034] 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.
- [1035] 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.
- [1036] T. Hanne. **On the convergence of multiobjective evolutionary algorithms**. *European Journal of Operational Research*, 117(3):553–564, 1999.
- [1037] 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.
- [1038] M. P. Hansen. *Metaheuristics for multiple objective combinatorial optimization*. PhD thesis, Institute of Mathematical Modelling, Technical University of Denmark, Mar. 1998.
- [1039] M. P. Hansen and A. Jaskiewicz. **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.
- [1040] N. Hansen. **The CMA evolution strategy: a comparing review**. In *Towards a new evolutionary computation*, pages 75–102. Springer, 2006.
- [1041] 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.
- [1042] 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.
- [1043] 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.
- [1044] 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>.
- [1045] 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.
- [1046] 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.

- [1047] P. Hansen and B. Jaumard. **Algorithms for the Maximum Satisfiability Problem.** *Computing*, 44:279–303, 1990.
- [1048] P. Hansen and N. Mladenović. **Variable neighborhood search: Principles and applications.** *European Journal of Operational Research*, 130(3):449–467, 2001.
- [1049] 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.
- [1050] 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, 2nd edition, 2010.
- [1051] 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.
- [1052] 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.
- [1053] 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.
- [1054] 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.
- [1055] 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.
- [1056] K. Haraguchi. **Iterated Local Search with Trellis-Neighborhood for the Partial Latin Square Extension Problem.** *Journal of Heuristics*, 22(5):727–757, 2016.
- [1057] D. P. Hardin and E. B. Saff. **Discretizing Manifolds via Minimum Energy Points.** *Notices of the American Mathematical Society*, 51(10):1186–1194, 2004.
- [1058] 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.
- [1059] J. P. Hart and A. W. Shogan. **Semi-greedy heuristics: An empirical study.** *Operations Research Letters*, 6(3):107–114, 1987.
- [1060] 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.
- [1061] 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.

- [1062] 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](https://doi.org/10.1080/00207540310001657595).
- [1063] D. Haussler, editor. *Proceedings of the Fifth Annual ACM Conference on Computational Learning Theory, COLT 1992, Pittsburgh, PA, USA, July 27-29, 1992*, 1992. ACM Press.
- [1064] S. Haykin. **A comprehensive foundation.** *Neural Networks*, 2:41, 2004.
- [1065] Ö. Hazir, Y. Günlal, 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](https://doi.org/10.1007/s00170-007-0998-8).  
Keywords: ACO, Customer order scheduling, Genetic algorithms, Meta-heuristics, Simulated annealing, Tabu search.
- [1066] 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 International Conference on Machine Learning, ICML 2009*, pages 401–408, New York, NY, 2009. ACM Press. doi:[10.1145/1553374.1553426](https://doi.org/10.1145/1553374.1553426).  
Keywords: automated algorithm configuration, CMA-ES, racing.
- [1067] S. R. Hejazi and S. Saghaian. **Flowshop-scheduling Problems with Makespan Criterion: A Review.** *International Journal of Production Research*, 43(14):2895–2929, 2005.
- [1068] C. Helmberg and F. Rendl. **Solving quadratic (0,1)-problems by semidefinite programs and cutting planes.** *Mathematical Programming*, 82(3):291–315, 1998.
- [1069] K. Helsgaun. **An Effective Implementation of the Lin-Kernighan Traveling Salesman Heuristic.** *European Journal of Operational Research*, 126:106–130, 2000.
- [1070] K. Helsgaun. **General  $k$ -opt Submoves for the Lin-Kernighan TSP Heuristic.** *Mathematical Programming Computation*, 1(2–3):119–163, 2009.
- [1071] 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.
- [1072] 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).
- [1073] H. Hernández and C. Blum. **Ant colony optimization for multicasting in static wireless ad-hoc networks.** *Swarm Intelligence*, 3(2):125–148, 2009.
- [1074] M. A. Heroux. **Editorial: ACM TOMS Replicated Computational Results Initiative.** *ACM Transactions on Mathematical Software*, 41(3):1–5, June 2015. doi:[10.1145/2743015](https://doi.org/10.1145/2743015).
- [1075] 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.
- [1076] 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).
- [1077] 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.



- [1078] M. Heule and S. Weaver, editors. *Theory and Applications of Satisfiability Testing – SAT 2015*, volume 9340 of *Lecture Notes in Computer Science*. Springer, Cham, 2015.
- [1079] D. P. Heyman and M. J. Sobel. *Stochastic models in operations research: stochastic optimization*, volume 2. Courier Corporation, 2003.
- [1080] 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.
- [1081] G. E. Hinton and R. R. Salakhutdinov. **Reducing the dimensionality of data with neural networks**. *Science*, 313(5786):504–507, 2006.
- [1082] D. S. Hochbaum, editor. *Approximation Algorithms For NP-hard Problems*. PWS Publishing Co., 1996.
- [1083] W. Hoeffding. **Probability inequalities for sums of bounded random variables**. *Journal of the American Statistical Association*, 58(301):13–30, 1963.
- [1084] J. Holland. *Adaptation in Natural and Artificial Systems*. University of Michigan Press, 1975.
- [1085] M. Hollander and D. A. Wolfe. *Nonparametric statistical inference*. John Wiley & Sons, New York, NY, 1973. Second edition (1999).
- [1086] 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.
- [1087] 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.
- [1088] 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.
- [1089] J. N. Hooker. **Needed: An Empirical Science of Algorithms**. *Operations Research*, 42(2):201–212, 1994.
- [1090] J. N. Hooker. **Testing Heuristics: We Have It All Wrong**. *Journal of Heuristics*, 1(1):33–42, 1996. doi:10.1007/BF02430364.
- [1091] 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.
- [1092] 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.
- [1093] H. H. Hoos. **Programming by optimization**. *Communications of the ACM*, 55(2):70–80, Feb. 2012. doi:10.1145/2076450.2076469.
- [1094] H. H. Hoos and T. Stützle. **Evaluating Las Vegas Algorithms — Pitfalls and Remedies**. In G. F. Cooper and S. Moral, editors, *Proceedings of the Fourteenth Conference on Uncertainty in Artificial Intelligence*, pages 238–245. Morgan Kaufmann Publishers, San Francisco, CA, 1998.
- [1095] H. H. Hoos and T. Stützle. *Stochastic Local Search: Foundations and Applications*. Elsevier, Amsterdam, The Netherlands, 2004.

- [1096] H. H. Hoos and T. Stützle. *Stochastic Local Search—Foundations and Applications*. Morgan Kaufmann Publishers, San Francisco, CA, 2005.
- [1097] 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.
- [1098] 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.
- [1099] H. H. Hoos, M. T. Lindauer, and T. Schaub. **Clasppfolio 2: Advances in Algorithm Selection for Answer Set Programming**. *Theory and Practice of Logic Programming*, 14(4-5):560–585, 2014.
- [1100] 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/ICCE.1994.350037.
- [1101] 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.
- [1102] 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, New York, NY, 2008. ACM Press. doi:10.1145/1356058.1356080.
- [1103] 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.
- [1104] 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.
- [1105] 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.
- [1106] 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.
- [1107] 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.  
*Keywords:* BML, Optimization, Simulation, Traffic congestion, Updating rules.
- [1108] D. Huang, T. T. Allen, W. I. Notz, and N. Zeng. **Global Optimization of Stochastic Black-Box Systems via Sequential Kriging Meta-Models**. *Journal of Global Optimization*, 34(3):441–466, 2006. doi:10.1007/s10898-005-2454-3.
- [1109] 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.

- [1110] 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.
- [1111] 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.
- [1112] 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.
- [1113] B. Huberman, R. Lukose, and T. Hogg. **An Economic Approach to Hard Computational Problems**. *Science*, 275:51–54, 1997.
- [1114] 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.
- [1115] 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.
- [1116] 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.
- [1117] 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.
- [1118] 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.
- [1119] 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.
- [1120] 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.
- [1121] 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.
- [1122] 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.
- [1123] S. H. Hurlbert. **Pseudoreplication and the Design of Ecological Field Experiments**. *Ecological Monographs*, 54(2):187–211, 1984.

- [1124] 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.
- [1125] 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.
- [1126] 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.
- [1127] M. S. Hussin and T. Stützle. **Tabu Search vs. Simulated Annealing for Solving Large Quadratic Assignment Instances.** *Computers & Operations Research*, 43:286–291, 2014.
- [1128] F. Hutter. **SAT benchmarks used in automated algorithm configuration.** <http://www.cs.ubc.ca/labs/beta/Projects/AAC/SAT-benchmarks.html>, 2007.
- [1129] 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.
- [1130] 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.
- [1131] 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.
- [1132] 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.
- [1133] 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.
- [1134] 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.
- [1135] 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.
- [1136] 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.
- [1137] 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.

- [1138] 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.
- [1139] 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.
- [1140] 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>.
- [1141] 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](https://doi.org/10.1007/978-3-642-44973-4_40).  
*Keywords*: parameter importance.
- [1142] 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 31st International Conference on Machine Learning, ICML 2014*, volume 32, pages 754–762, 2014. URL <http://jmlr.org/proceedings/papers/v32/hutter14.html>.  
*Keywords*: fANOVA, parameter importance.
- [1143] 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](https://doi.org/10.1007/978-3-319-09584-4_4).
- [1144] F. Hutter, L. Xu, H. H. Hoos, and K. Leyton-Brown. **Algorithm runtime prediction: Methods & evaluation**. *Artificial Intelligence*, 206:79–111, 2014.
- [1145] 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.
- [1146] 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.
- [1147] 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](https://doi.org/10.1016/j.artint.2016.09.006).
- [1148] C. Iacopino and P. Palmer. **The Dynamics of Ant Colony Optimization Algorithms Applied to Binary Chains**. *Swarm Intelligence*, 6(4):343–377, 2012.
- [1149] T. Ibaraki. **A Personal Perspective on Problem Solving by General Purpose Solvers**. *International Transactions in Operational Research*, 17(3):303–315, 2010.
- [1150] 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.



- [1151] IBM. **ILOG CPLEX Optimizer**. <http://www.ibm.com/software/integration/optimization/cplex-optimizer/>, 2017.
- [1152] ICMLC. *Proceedings of the International Conference on Machine Learning and Cybernetics*, 2006. IEEE Press.
- [1153] J. Ide and A. Schöbel. **Robustness for uncertain multi-objective optimization: a survey and analysis of different concepts**. *OR Spectrum*, 38(1):235–271, 2016. doi:10.1007/s00291-015-0418-7.
- [1154] IEEE CEC. *Proceedings of the 1999 Congress on Evolutionary Computation (CEC 1999)*, Piscataway, NJ, 1999. IEEE Press.
- [1155] IEEE CEC. *Proceedings of the 2000 Congress on Evolutionary Computation (CEC 2000)*, Piscataway, NJ, July 2000. IEEE Press.
- [1156] IEEE CEC. *Proceedings of the 2001 Congress on Evolutionary Computation (CEC 2001)*, Piscataway, NJ, 2001. IEEE Press.
- [1157] IEEE CEC. *Proceedings of the 2002 Congress on Evolutionary Computation (CEC’02)*, Piscataway, NJ, 2002. IEEE Press.
- [1158] IEEE CEC. *Proceedings of the 2003 Congress on Evolutionary Computation (CEC 2003)*, volume 4, Piscataway, NJ, Dec. 2003. IEEE Press.
- [1159] IEEE CEC. *Proceedings of the 2004 Congress on Evolutionary Computation (CEC 2004)*, Piscataway, NJ, Sept. 2004. IEEE Press.
- [1160] IEEE CEC. *Proceedings of the 2005 Congress on Evolutionary Computation (CEC 2005)*, Piscataway, NJ, Sept. 2005. IEEE Press.
- [1161] IEEE CEC. *Proceedings of the 2006 Congress on Evolutionary Computation (CEC 2006)*, Piscataway, NJ, July 2006. IEEE Press.
- [1162] IEEE CEC. *Proceedings of the 2007 Congress on Evolutionary Computation (CEC 2007)*, Piscataway, NJ, 2007. IEEE Press.
- [1163] IEEE CEC. *Proceedings of the IEEE Congress on Evolutionary Computation, CEC 2008, June 1-6, 2008, Hong Kong, China*, Piscataway, NJ, 2008. IEEE Press.
- [1164] IEEE CEC. *Proceedings of the 2009 Congress on Evolutionary Computation (CEC 2009)*, Piscataway, NJ, 2009. IEEE Press.
- [1165] IEEE CEC. *Proceedings of the 2011 Congress on Evolutionary Computation (CEC 2011)*, Piscataway, NJ, 2011. IEEE Press.
- [1166] IEEE CEC. *Proceedings of the 2012 Congress on Evolutionary Computation (CEC 2012)*, Piscataway, NJ, 2012. IEEE Press.
- [1167] IEEE CEC. *Proceedings of the 2013 Congress on Evolutionary Computation (CEC 2013)*, Piscataway, NJ, 2013. IEEE Press.
- [1168] IEEE CEC. *Proceedings of the 2014 Congress on Evolutionary Computation (CEC 2014)*, Piscataway, NJ, 2014. IEEE Press.
- [1169] IEEE CEC. *Proceedings of the 2015 Congress on Evolutionary Computation (CEC 2015)*, Piscataway, NJ, 2015. IEEE Press.
- [1170] 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.

- [1171] IEEE CEC. *Proceedings of the 2017 Congress on Evolutionary Computation (CEC 2017)*, Piscataway, NJ, 2017. IEEE Press.
- [1172] IEEE CEC. *Proceedings of the 2018 Congress on Evolutionary Computation (CEC 2018)*, Piscataway, NJ, 2018. IEEE Press.
- [1173] IEEE CEC. *Proceedings of the 2019 Congress on Evolutionary Computation (CEC 2019)*, Piscataway, NJ, 2019. IEEE Press.
- [1174] 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.
- [1175] C. Igel, N. Hansen, and S. Roth. **Covariance Matrix Adaptation for Multi-objective Optimization**. *Evolutionary Computation*, 15(1):1–28, 2007.
- [1176] 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>.
- [1177] 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.
- [1178] 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.
- [1179] J. Illian, A. Penttinen, H. Stoyan, and D. Stoyan. *Statistical Analysis and Modelling of Spatial Point Patterns*. Wiley, 2008.
- [1180] 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.
- [1181] Innovation 24. **LocalSolver**. <http://www.localsolver.com/product.html>, 2016. Last visited, August 15, 2016.
- [1182] A. Inselberg. **The Plane with Parallel Coordinates**. *The visual computer*, 1(2):69–91, 1985.
- [1183] Intel. **Intel Software Autotuning Tool**. <https://software.intel.com/en-us/articles/intel-software-autotuning-tool/>, 2010.
- [1184] 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.
- [1185] 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.
- [1186] E. Irurozki, B. Calvo, and J. A. Lozano. **Sampling and Learning Mallows and Generalized Mallows Models Under the Cayley Distance**. *Methodology and Computing in Applied Probability*, 20(1):1–35, June 2016. doi:10.1007/s11009-016-9506-7.
- [1187] E. Irurozki, B. Calvo, and J. A. Lozano. **PerMallows: An R Package for Mallows and Generalized Mallows Models**. *Journal of Statistical Software*, 71, 2019. ISSN 15487660. doi:10.18637/jss.v071.i12.  
*Keywords:* Cayley, Generalized Mallows, Hamming, Kendall's  $\tau$ , Learning, Mallows, Permutation, R, Ranking, Sampling, Ulam.

- [1188] E. Irurozki, J. Lobo, A. Perez, and J. Del Ser. **Rank aggregation for non-stationary data streams**. *Arxiv preprint arXiv*., 2020.  
*Keywords*: uborda, Submitted.
- [1189] 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.
- [1190] 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.
- [1191] 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.
- [1192] 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.
- [1193] 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.
- [1194] 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.  
*Keywords*: Performance metrics, multi-objective, IGD, IGD+.  
*Annotation*: Proposed IGD+.
- [1195] H. Ishibuchi et al., editors. *Proceedings of the 2010 Congress on Evolutionary Computation (CEC 2010)*, Piscataway, NJ, 2010. IEEE Press.
- [1196] K. Ito, F. Harashima, and K. Tanie, editors. *1999 IEEE International Conference on Systems, Man, and Cybernetics October 12915,1999, Tokyo, Japan*, 1999. IEEE Press.
- [1197] 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.
- [1198] 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/>.
- [1199] 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.
- [1200] L. W. Jacobs and M. J. Brusco. **A Local Search Heuristic for Large Set-Covering Problems**. *Naval Research Logistics*, 42(7):1129–1140, 1995.
- [1201] 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.

- [1202] 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.
- [1203] 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.
- [1204] 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.
- [1205] A. Jaskiewicz. **Genetic local search for multi-objective combinatorial optimization.** *European Journal of Operational Research*, 137(1):50–71, 2002.
- [1206] A. Jaskiewicz. **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.
- [1207] A. Jaskiewicz. **Many-Objective Pareto Local Search.** *European Journal of Operational Research*, 271(3):1001–1013, 2018. doi:10.1016/j.ejor.2018.06.009.
- [1208] A. Jaskiewicz 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.
- [1209] A. Jaskiewicz, 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.
- [1210] 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.
- [1211] M. Jerrum. **Large cliques elude the Metropolis process.** *Random Structures & Algorithms*, 3(4):347–359, 1992.
- [1212] 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.
- [1213] A. Jhingran et al., editors. *ACM Conference on Electronic Commerce (EC-00)*. ACM Press, New York, NY, 2000.
- [1214] 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.
- [1215] Y. Jin. **A Comprehensive Survey of Fitness Approximation in Evolutionary Computation.** *Soft Computing*, 9(1):3–12, 2005.
- [1216] Y. Jin and J. Branke. **Evolutionary Optimization in Uncertain Environments—A Survey.** *IEEE Transactions on Evolutionary Computation*, 9(5):303–317, 2005.
- [1217] A. W. Johnson and S. H. Jacobson. **On the Convergence of Generalized Hill Climbing Algorithms.** *Discrete Applied Mathematics*, 119(1):37–57, 2002.
- [1218] D. S. Johnson. **Optimal Two- and Three-stage Production Scheduling with Setup Times Included.** *Naval Research Logistics Quarterly*, 1:61–68, 1954.

- [1219] 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.
- [1220] 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.
- [1221] 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.
- [1222] 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.
- [1223] 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.
- [1224] D. S. Johnson, C. H. Papadimitriou, and M. Yannakakis. **How Easy is Local Search?** *Journal of Computer System Science*, 37(1):79–100, 1988.
- [1225] 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.
- [1226] 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.
- [1227] D. S. Johnson, L. A. McGeoch, C. Rego, and F. Glover. **8th DIMACS Implementation Challenge: The Traveling Salesman Problem**. <http://dimacs.rutgers.edu/archive/Challenges/TSP>, 2001.  
*Keywords*: TSP Challenge, RUE, RCE, generators.
- [1228] 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.
- [1229] 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.
- [1230] 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.  
*Annotation*: Proposed EGO algorithm.
- [1231] D. E. Joslin and D. P. Clements. **Squeaky Wheel Optimization**. *Journal of Artificial Intelligence Research*, 10:353–373, 1999.
- [1232] 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.



- [1233] 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.
- [1234] 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.
- [1235] 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.
- [1236] 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.
- [1237] 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.
- [1238] M. Jünger, G. Reinelt, and S. Thienel. **Provably Good Solutions for the Traveling Salesman Problem.** *Zeitschrift für Operations Research*, 40(2):183–217, 1994.
- [1239] 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.
- [1240] J. Kacprzyk and W. Pedrycz, editors. *Springer Handbook of Computational Intelligence*. Springer, Berlin, Heidelberg, 2015.
- [1241] 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.
- [1242] D. Kahneman. **Maps of bounded rationality: Psychology for behavioral economics.** *American economic review*, 93(5):1449–1475, 2003.
- [1243] D. Kahneman and A. Tversky. **Prospect theory: An analysis of decision under risk.** *Econometrica*, 47(2):263–291, 1979. doi:10.2307/1914185.
- [1244] 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.
- [1245] J. Kallrath, editor. *Modeling Languages in Mathematical Optimization*, volume 88 of *Applied Optimization*. Kluwer Academic Publishers, 2004.

- [1246] 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.
- [1247] D. Karaboga and B. Akay. **A Survey: Algorithms Simulating Bee Swarm Intelligence.** *Artificial Intelligence Review*, 31(1–4):61–85, 2009.
- [1248] K. Karabulut. **A hybrid iterated greedy algorithm for total tardiness minimization in permutation flowshops.** *Computers and Industrial Engineering*, 98(Supplement C):300 – 307, 2016.
- [1249] 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.
- [1250] 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.
- [1251] 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.
- [1252] 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.
- [1253] 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.
- [1254] 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.
- [1255] D. Karapetyan, A. J. Parkes, and T. Stützle. **Algorithm Configuration: Learning policies for the quick termination of poor performers.** 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 220–224. Springer, Cham, Switzerland, 2018.
- [1256] 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.
- [1257] 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.
- [1258] 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.  
*Keywords:* scenario-based.

- [1259] 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.  
*Keywords:* scenario-based.
- [1260] 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.
- [1261] S. A. Kauffman. *The Origins of Order*. Oxford University Press, 1993.
- [1262] 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.
- [1263] 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.
- [1264] 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](https://doi.org/10.1016/j.cie.2007.10.001).  
*Keywords:* Ant colony optimization, Ant system, Heuristics, Team orienteering problem.
- [1265] 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.
- [1266] M. J. Kearns, R. P. McAfee, and É. Tardos, editors. *Proceedings of the fourteenth ACM Conference on Electronic Commerce, EC 2013, Philadelphia, PA, USA, June 16-20, 2013*. ACM Press, New York, NY, 2013. doi:[10.1145/2492002](https://doi.org/10.1145/2492002).
- [1267] 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.
- [1268] R. L. Keeney. **Analysis of preference dependencies among objectives.** *Operations Research*, 29:1105–1120, 1981.
- [1269] R. E. Keller and R. Poli. **Linear genetic programming of parsimonious metaheuristics.** In *Proceedings of the 2007 Congress on Evolutionary Computation (CEC 2007)*, pages 4508–4515, Piscataway, NJ, 2007. IEEE Press. doi:[10.1109/CEC.2007.4425062](https://doi.org/10.1109/CEC.2007.4425062).
- [1270] 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.
- [1271] H. Kellerer, U. Pferschy, and D. Pisinger. *Knapsack problems*. Springer, 2004.
- [1272] G. Kendall, G. V. Berghe, and B. McCollum, editors. *Multidisciplinary International Conference on Scheduling: Theory and Applications (MISTA 2013)*, Gent, Belgium, 2013.
- [1273] 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.

- [1274] M. G. Kendall. *Rank correlation methods*. Griffin, London, 1948.
- [1275] 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.
- [1276] 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.
- [1277] J. Kennedy, R. C. Eberhart, and Y. Shi. *Swarm Intelligence*. Morgan Kaufmann Publishers, San Francisco, CA, 2001.
- [1278] B. W. Kernighan and S. Lin. **An Efficient Heuristic Procedure for Partitioning Graphs**. *Bell Systems Technology Journal*, 49(2):213–219, 1970.
- [1279] N. L. Kerr. **HARKing: Hypothesizing After the Results are Known**. *Personality and Social Psychology Review*, 2(3):196–217, Aug. 1998. doi:[10.1207/s15327957pspr0203\\_4](https://doi.org/10.1207/s15327957pspr0203_4).
- [1280] 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).
- [1281] 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](https://doi.org/10.1109/CEC.2016.7748359).
- [1282] 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](https://doi.org/10.1162/evco_a_00236).
- [1283] P. Kerschke, H. Wang, M. Preuss, C. Grimme, A. H. Deutz, H. Trautmann, and M. T. 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, *Proceedings of PPSN XIV, 14th International Conference on Parallel Problem Solving from Nature*, 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](https://doi.org/10.1007/978-3-319-45823-6_90).
- [1284] P. Kerschke, H. H. Hoos, F. Neumann, and H. Trautmann. **Automated Algorithm Selection: Survey and Perspectives**. *Evolutionary Computation*, 27(1):3–45, 2019.
- [1285] P. Kerschke, H. Wang, M. Preuss, C. Grimme, A. H. Deutz, H. Trautmann, and M. T. M. Emmerich. **Search Dynamics on Multimodal Multiobjective Problems**. *Evolutionary Computation*, 27(4):577–609, 2019. doi:[10.1162/evco\\_a\\_00234](https://doi.org/10.1162/evco_a_00234).
- [1286] 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.
- [1287] M. Khichane, P. Albert, and C. Solnon. **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.

- [1288] M. Khichane, P. Albert, and C. Solnon. **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.
- [1289] 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.
- [1290] 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.
- [1291] 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.
- [1292] 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.
- [1293] Y. Kim, R. Allmendinger, and M. López-Ibáñez. **Safe Learning and Optimization Techniques: Towards a Survey of the State of the Art.** In *1st TAILOR Workshop at ECAI 2020*, Santiago de Compostela, Spain, 2020.
- [1294] 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.
- [1295] 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.
- [1296] S. Kirkpatrick. **Optimization by Simulated Annealing: Quantitative Studies.** *Journal of Statistical Physics*, 34(5-6):975–986, 1984.
- [1297] S. Kirkpatrick and G. Toulouse. **Configuration Space Analysis of Travelling Salesman Problems.** *Journal de Physique*, 46(8):1277–1292, 1985.
- [1298] S. Kirkpatrick, C. D. Gelatt, and M. P. Vecchi. **Optimization by Simulated Annealing.** *Science*, 220:671–680, 1983.
- [1299] 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.
- [1300] 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.
- [1301] 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).



- [1302] 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. Supplementary material: [http://dbkgroup.org/knowles/plot\\_attainments/](http://dbkgroup.org/knowles/plot_attainments/).
- [1303] 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.
- [1304] J. D. Knowles. **Closed-loop evolutionary multiobjective optimization.** *IEEE Computational Intelligence Magazine*, 4:77–91, 2009. doi:10.1109/MCI.2009.933095.
- [1305] 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.
- [1306] 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.
- [1307] 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.
- [1308] 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.
- [1309] 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.  
Keywords: S-metric, hypervolume.  
Annotation: Proposed to use S-metric (hypervolume metric) for environmental selection.
- [1310] 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.
- [1311] 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.
- [1312] 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.
- [1313] 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.

- [1314] 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](https://doi.org/10.1007/978-3-540-72964-8_1).
- [1315] J. D. Knowles, D. Corne, K. Deb, and D. R. Chair, editors. *Multiobjective Problem Solving from Nature*. Natural Computing Series. Springer, 2008.
- [1316] 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.
- [1317] 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.
- [1318] G. A. Kochenberger, J.-K. Hao, F. Glover, M. Lewis, Z. Lü, H. Wang, and Y. Wang. **The unconstrained binary quadratic programming problem: a survey.** *Journal of Combinatorial Optimization*, 28(1):58–81, 2014.
- [1319] M. Köksalan. **Multiobjective Combinatorial Optimization: Some Approaches.** *Journal of Multi-Criteria Decision Analysis*, 15:69–78, 2009. doi:[10.1002/mcda.425](https://doi.org/10.1002/mcda.425).
- [1320] 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](https://doi.org/10.1109/TEVC.2010.2070070).
- [1321] A. Kolen and E. Pesch. **Genetic Local Search in Combinatorial Optimization.** *Discrete Applied Mathematics*, 48(3):273–284, 1994.
- [1322] 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](https://doi.org/10.1016/j.ejor.2005.01.065).  
*Keywords:* Computational evaluation, Heuristics, Project scheduling, Resource constraints.
- [1323] 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.
- [1324] T. C. Koopmans and M. J. Beckmann. **Assignment Problems and the Location of Economic Activities.** *Econometrica*, 25:53–76, 1957.
- [1325] M. Koppen and K. Yoshida. **Visualization of Pareto-sets in evolutionary multi-objective optimization.** In *7th International Conference on Hybrid Intelligent Systems (HIS 2007)*, pages 156–161. IEEE, 2007.
- [1326] 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](https://doi.org/10.1007/11839088_22).
- [1327] 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.
- [1328] 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.

- [1329] 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.
- [1330] 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.
- [1331] 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.
- [1332] 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.
- [1333] P. Korošec, J. Šilc, and B. Robič. **Solving the mesh-partitioning problem with an ant-colony algorithm**. *Parallel Computing*, 30:785–801, 2004.
- [1334] 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.
- [1335] L. Kotthoff. **Algorithm Selection for Combinatorial Search Problems: A Survey**. *AI Magazine*, 35(3):48–60, 2014.
- [1336] 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.
- [1337] 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.
- [1338] P. Kouvelis and G. Yu. *Robust discrete optimization and its applications*. Nonconvex optimization and its applications. Kluwer Academic Publishers, Dordrecht, The Netherlands, 1997.
- [1339] 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.
- [1340] 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.
- [1341] J. Koza. *Genetic Programming: On the Programming of Computers By the Means of Natural Selection*. MIT Press, Cambridge, MA, 1992.
- [1342] J. R. Koza, editor. *Genetic Programming 1998: Proceedings of the Third Annual Conference, Late Breaking Papers*, Stanford University, California, July 1998. Stanford University Bookstore.
- [1343] S. Koziel and X.-S. Yang, editors. *Computational Optimization, Methods and Algorithms*, volume 356 of *Studies in Computational Intelligence*. Springer, Berlin/Heidelberg, 2011.
- [1344] 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.

- [1345] 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.
- [1346] D. Krajzewicz, M. Heinrich, M. Milano, P. Bellavista, T. Stützle, J. Härrä, 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.
- [1347] 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.
- [1348] 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.
- [1349] 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.
- [1350] 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.
- [1351] 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.
- [1352] 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.
- [1353] S. Kreipl. **A Large Step Random Walk for Minimizing Total Weighted Tardiness in a Job Shop**. *Journal of Scheduling*, 3(3):125–138, 2000.
- [1354] 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.
- [1355] 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.
- [1356] S. Kritzinger, 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.
- [1357] W. H. Kruskal and J. M. Tanur. *Linear Hypotheses*, volume 1. Free Press, 1978.

- [1358] 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.
- [1359] 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.
- [1360] 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.
- [1361] R. Kumar and P. K. Singh. **Pareto Evolutionary Algorithm Hybridized with Local Search for Biobjective TSP.** *Studies in Computational Intelligence*, 75:361–398, 2007.
- [1362] 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.
- [1363] 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.
- [1364] 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.
- [1365] 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.
- [1366] 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.
- [1367] 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.
- [1368] 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.
- [1369] M. Labbé and A. Violin. **Bilevel programming and price setting problems.** *4OR*, 11(1): 1–30, 2013. doi:10.1007/s10288-012-0213-0.
- [1370] 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.
- [1371] 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.



- [1372] 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.
- [1373] S. R. Ladd. **ACOVEA (Analysis of Compiler Options via Evolutionary Algorithm)**. <https://github.com/Acovea/libacovea>, 2000.
- [1374] 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.
- [1375] A. H. Land and A. G. Doig. **An Automatic Method of Solving Discrete Programming Problems**. *Econometrica*, 28(3):497–520, 1960.
- [1376] 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.
- [1377] W. B. Langdon and M. Harman. **Optimising Software with Genetic Programming**. *IEEE Transactions on Evolutionary Computation*, 19(1):118–135, 2015.
- [1378] W. B. Langdon et al., editors. *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2002*. Morgan Kaufmann Publishers, San Francisco, CA, 2002.
- [1379] 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.
- [1380] J. Langford and J. Pineau, editors. *Proceedings of the 29th International Conference on Machine Learning, ICML 2012, Edinburgh, Scotland, UK, June 26 - July 1, 2012*, 2012. Omnipress.
- [1381] 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.
- [1382] G. Laporte. **Fifty Years of Vehicle Routing**. *Transportation Science*, 43(4):408–416, 2009.
- [1383] 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.
- [1384] C. Larman. *Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and Iterative Development*. Prentice Hall, Englewood Cliffs, NJ, 3rd edition, 2004.
- [1385] P. Larrañaga and J. A. Lozano. *Estimation of Distribution Algorithms: A New Tool for Evolutionary Computation*. Kluwer Academic Publishers, Boston, MA, 2002.
- [1386] 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.
- [1387] M. Laumanns. **Stochastic convergence of random search to fixed size Pareto set approximations**. *Arxiv preprint arXiv:0711.2949*, 2007.
- [1388] M. Laumanns and R. Zenklusen. **Stochastic convergence of random search methods to fixed size Pareto front approximations**. (submitted), Nov. 2010.
- [1389] 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.

- [1390] 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.
- [1391] M. Laumanns, L. Thiele, K. Deb, and E. Zitzler. **Combining Convergence and Diversity in Evolutionary Multiobjective Optimization**. *Evolutionary Computation*, 10(3):263–282, 2002.
- [1392] 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.
- [1393] 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.
- [1394] 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.
- [1395] 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.
- [1396] 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.
- [1397] 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.
- [1398] 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.
- [1399] 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.
- [1400] Y. LeCun, Y. Bengio, and G. Hinton. **Deep learning**. *Nature*, 521(7553):436–444, 2015.
- [1401] 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.
- [1402] 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.
- [1403] 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.
- [1404] 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.
- [1405] 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.
- [1406] 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.

- [1407] 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.
- [1408] 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.
- [1409] R. M. R. Lewis. *A Guide to Graph Colouring: Algorithms and Applications*. Springer, Cham, 2016. doi:10.1007/978-3-319-25730-3.  
Annotation: Supplementary material available at [1410].
- [1410] R. M. R. Lewis. **Suite of Graph Colouring Algorithms – Supplementary Material to the Book “A Guide to Graph Colouring: Algorithms and Applications”**. <http://rhydlewislewis.eu/resources/gCol.zip>, 2016.
- [1411] 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>.
- [1412] 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.
- [1413] 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.
- [1414] B. Li, J. Li, K. Tang, and X. Yao. **Many-Objective Evolutionary Algorithms: A Survey**. *ACM Computing Surveys*, 48(1):1–35, 2015.
- [1415] 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.
- [1416] J. D. Li. **A two-step rejection procedure for testing multiple hypotheses**. *Journal of Statistical Planning and Inference*, 138(6):1521–1527, 2008.
- [1417] 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.
- [1418] 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.
- [1419] 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.

- [1420] 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.
- [1421] Y. Li and W. Li. **Adaptive Ant Colony Optimization Algorithm Based on Information Entropy: Foundation and Application**. *Fundamenta Informaticae*, 77(3):229–242, 2007.
- [1422] 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.
- [1423] 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.
- [1424] 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.
- [1425] 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.
- [1426] 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.
- [1427] 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.
- [1428] 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.
- [1429] 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.
- [1430] 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.
- [1431] T. Liao, D. Aydın, and T. Stützle. **Artificial Bee Colonies for Continuous Optimization: Experimental Analysis and Improvements**. *Swarm Intelligence*, 7(4):327–356, 2013.
- [1432] 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.
- [1433] 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.

- [1434] 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.
- [1435] 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.  
*Keywords:* ACOR.
- [1436] 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.
- [1437] 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.
- [1438] A. Liefooghe 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.
- [1439] A. Liefooghe, 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.
- [1440] A. Liefooghe, 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.
- [1441] A. Liefooghe, 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.
- [1442] A. Liefooghe, 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.
- [1443] A. Liefooghe, 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.
- [1444] A. Liefooghe, 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.



- [1445] A. Liefooghe, 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.
- [1446] B. Likar and J. Kocijan. **Predictive control of a gas–liquid separation plant based on a Gaussian process model.** *Computers & Chemical engineering*, 31(3):142–152, 2007. doi:10.1016/j.compchemeng.2006.05.011.
- [1447] D. J. Lilja. *Measuring Computer Performance: A Practitioner’s Guide*. Cambridge University Press, 2000. doi:10.1017/CB09780511612398.
- [1448] S. Lin and B. W. Kernighan. **An Effective Heuristic Algorithm for the Traveling Salesman Problem.** *Operations Research*, 21(2):498–516, 1973.
- [1449] 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.
- [1450] 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.
- [1451] M. T. Lindauer, J. N. Van Rijn, and L. Kotthoff. **The algorithm selection competitions 2015 and 2017.** *Artificial Intelligence*, 272:86–100, 2019.
- [1452] 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.
- [1453] 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.
- [1454] 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.
- [1455] 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.
- [1456] S. Liu, D. Maljovec, B. Wang, P.-T. Bremer, and V. Pascucci. **Visualizing High-Dimensional Data: Advances in the Past Decade.** *IEEE Transactions on Visualization and Computer Graphics*, 23(3), 2017. doi:10.1109/TVCG.2016.2640960.
- [1457] F. Lobo, C. F. Lima, and Z. Michalewicz, editors. *Parameter Setting in Evolutionary Algorithms*. Springer, Berlin, Germany, 2007.
- [1458] A. Lodi and A. Tramontani. **Performance Variability in Mixed-Integer Programming.** In H. Topaloglu, editor, *Theory Driven by Influential Applications*, pages 1–12. INFORMS Journal on Computing, 2013.
- [1459] 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.
- [1460] 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.

- [1461] A. Lodi, S. Martello, and D. Vigo. **Two- and Three-Dimensional Bin Packing – Source Code of TSPack**. [http://or.dei.unibo.it/research\\_pages/ORcodes/TSPack.html](http://or.dei.unibo.it/research_pages/ORcodes/TSPack.html), 2004.
- [1462] 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.
- [1463] 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.
- [1464] M. López-Ibáñez. *Multi-objective Ant Colony Optimization*. Diploma thesis, Intellectics Group, Computer Science Department, Technische Universität Darmstadt, Germany, 2004.
- [1465] 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.
- [1466] 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>.
- [1467] 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* [1469].
- [1468] 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.
- [1469] 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.  
*Keywords:* Ant colony optimization, Travelling salesman problem with time windows, Hybridization.
- [1470] 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.
- [1471] 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 [1472].
- [1472] 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.

- [1473] 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.
- [1474] 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.
- [1475] 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 [1474].
- [1476] 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 [1482].
- [1477] 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>.
- [1478] 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 [1483].
- [1479] 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.
- [1480] 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.
- [1481] 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/>.
- [1482] 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.
- [1483] 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/>.
- [1484] 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.

- [1485] 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 Informatik, FB Informatik, TU Darmstadt, Dec. 2004. Published in *Journal of Mathematical Modelling and Algorithms* [1488].
- [1486] 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.
- [1487] 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.
- [1488] 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.
- [1489] M. López-Ibáñez, T. D. Prasad, and B. Paechter. **Solving Optimal Pump Control Problem using MAX-MIN 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.
- [1490] 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. Ilemobade, 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.
- [1491] 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).
- [1492] 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.
- [1493] 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 [1494].
- [1494] 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.
- [1495] 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” [1494].  
Annotation: Please cite the book chapter, not this.

- [1496] 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 [1506].
- [1497] 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 [1498].
- [1498] 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>.
- [1499] 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.
- [1500] 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.
- [1501] 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.
- [1502] 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.
- [1503] 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>.
- [1504] 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.
- [1505] 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.
- [1506] 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/>.



- [1507] M. López-Ibáñez, J. Dubois-Lacoste, L. Pérez Cáceres, T. Stützle, and M. Birattari. **The irace Package: Iterated Racing for Automatic Algorithm Configuration (Supplementary material)**. <http://iridia.ulb.ac.be/supp/IridiaSupp2016-003>, 2016.
- [1508] 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>.
- [1509] 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>.
- [1510] M. López-Ibáñez, M.-E. Kessaci, and T. Stützle. **Automatic Design of Hybrid Metaheuristics from Algorithmic Components**. *Submitted*, 2017.
- [1511] 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/>.
- [1512] 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. doi:10.1145/3321707.
- [1513] 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. ISBN 978-1-4503-6748-6. doi:10.1145/3319619.
- [1514] 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.
- [1515] I. Loshchilov and T. Glasmachers. **Black Box Optimization Competition**, 2017. URL <https://bbcomp.ini.rub.de/>.
- [1516] 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.
- [1517] 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.
- [1518] 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.
- [1519] 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.

- [1520] 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.
- [1521] 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, 2nd edition, 2010. doi:10.1007/978-1-4419-1665-5\_12.
- [1522] 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.
- [1523] 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.
- [1524] 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.
- [1525] 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.
- [1526] 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.
- [1527] 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.
- [1528] M. Lundy and A. Mees. **Convergence of an Annealing Algorithm**. *Mathematical Programming*, 34(1):111–124, 1986.
- [1529] T. Lust and A. Jaskiewicz. **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.
- [1530] 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.
- [1531] 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.
- [1532] 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 [1533].

- [1533] 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.
- [1534] 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.
- [1535] 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.
- [1536] M. C. Machado, M. G. Bellemare, E. Talvitie, J. Veness, M. Hausknecht, and M. Bowling. **Revisiting the Arcade Learning Environment: Evaluation Protocols and Open Problems for General Agents.** *Journal of Artificial Intelligence Research*, 61(1):523–562, Jan. 2018. ISSN 1076-9757.
- [1537] 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, GALESIA'95*, volume 414, pages 400–405, Sheffield, UK, Sept. 1995. IEE Conference Publication.
- [1538] 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.
- [1539] S. Madden. **From Databases to Big Data.** *IEEE Internet Computing*, 16(3), 2012.
- [1540] 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.  
*Keywords:* Global optimization, Heuristics, Harmony search algorithm, Mathematical programming.
- [1541] 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.
- [1542] 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.
- [1543] G. B. Mainieri and D. P. Ronconi. **New heuristics for total tardiness minimization in a flexible flowshop.** *Optimization Letters*, pages 1–20, 2012.
- [1544] 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.
- [1545] 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.
- [1546] 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.

- [1547] Y. Malitsky, D. Mehta, B. O’Sullivan, and H. Simonis. **Tuning parameters of large neighborhood search for the machine reassignment problem.** In G. C. and S. M., editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, CPAIOR 2010*, volume 7874 of *Lecture Notes in Computer Science*, pages 176–192. Springer, Heidelberg, Germany, 2013. doi:10.1007/978-3-642-38171-3\_12.
- [1548] V. Maniezzo. **Exact and Approximate Nondeterministic Tree-Search Procedures for the Quadratic Assignment Problem.** *INFORMS Journal on Computing*, 11(4):358–369, 1999.
- [1549] V. Maniezzo and A. Carbonaro. **An ANTS Heuristic for the Frequency Assignment Problem.** *Future Generation Computer Systems*, 16(8):927–935, 2000.
- [1550] V. Maniezzo and A. Coloni. **The Ant System Applied to the Quadratic Assignment Problem.** *IEEE Transactions on Knowledge and Data Engineering*, 11(5):769–778, 1999.
- [1551] 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.
- [1552] 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.
- [1553] 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.
- [1554] 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.
- [1555] R. Männer and B. Manderick, editors. *Parallel Problem Solving from Nature 2, PPSN-II, Brussels, Belgium, September 28-30, 1992*. Elsevier, 1992.
- [1556] C. D. Manning, M. Surdeanu, J. Bauer, J. R. Finkel, S. J. Bethard, and D. McClosky. **The Stanford CoreNLP Natural Language Processing Toolkit.** In *Association for Computational Linguistics (ACL) System Demonstrations*, pages 55–60, 2014. Annotation: <http://www.aclweb.org/anthology/P/P14/P14-5010>.
- [1557] 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.
- [1558] 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.
- [1559] 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.

- [1560] 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.
- [1561] 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.
- [1562] 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.
- [1563] O. Maron. **Hoeffding Races: Model selection for MRI classification.** Master’s thesis, Massachusetts Institute of Technology, 1994.
- [1564] 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. Alspector, editors, *Advances in Neural Information Processing Systems*, volume 6, pages 59–66. Morgan Kaufmann Publishers, San Francisco, CA, 1994.
- [1565] O. Maron and A. W. Moore. **The Racing Algorithm: Model Selection for Lazy Learners.** *Artificial Intelligence Research*, 11(1–5):193–225, 1997.
- [1566] K. Marriott and P. Stuckey. *Programming With Constraints*. MIT PressCambridge, MA, 1998.
- [1567] 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.
- [1568] S. Martello and P. Toth. *Knapsack Problems: Algorithms and Computer Implementations*. John Wiley & Sons, Chichester, UK, 1990.  
*Keywords:* bin packing.
- [1569] 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.
- [1570] 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.
- [1571] R. Martí, P. M. Pardalos, and M. G. C. Resende, editors. *Handbook of Heuristics*. Springer International Publishing, 2018. ISBN 978-3-319-07125-1.
- [1572] O. Martin and S. W. Otto. **Partitioning of Unstructured Meshes for Load Balancing.** *Concurrency: Practice and Experience*, 7(4):303–314, 1995.
- [1573] O. Martin and S. W. Otto. **Combining Simulated Annealing with Local Search Heuristics.** *Annals of Operations Research*, 63:57–75, 1996.
- [1574] 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.



- [1575] 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.
- [1576] 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.
- [1577] 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.
- [1578] E. Q. V. Martins. **On a multicriteria shortest path problem**. *European Journal of Operational Research*, 16:236–245, 1984.
- [1579] 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.
- [1580] 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.
- [1581] 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.
- [1582] 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.
- [1583] 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.
- [1584] 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.
- [1585] 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.
- [1586] 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.

- [1587] 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.
- [1588] 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.
- [1589] Y. Mati, S. Dauzère-Pèrés, 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.
- [1590] 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.
- [1591] 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.
- [1592] R. M. McConnell, K. Mehlhorn, S. Näher, and P. Schweitzer. **Certifying algorithms**. *Computer Science Review*, 5(2):119–161, 2011. ISSN 1574-0137. doi:10.1016/j.cosrev.2010.09.009. Keywords: Algorithms, Software reliability, Certification.
- [1593] 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). Keywords: water supply; pumps; Markov processes; cost optimal control.
- [1594] 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.
- [1595] 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.
- [1596] 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.
- [1597] 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.
- [1598] 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.

- [1599] 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.
- [1600] 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).
- [1601] C. C. McGeoch. *A Guide to Experimental Algorithmics*. Cambridge University Press, 2012.
- [1602] 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.
- [1603] 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. doi:[10.2307/1268522](https://doi.org/10.2307/1268522).
- [1604] 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).
- [1605] 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.
- [1606] K. Meer. **Simulated annealing versus metropolis for a TSP instance.** *Information Processing Letters*, 104(6):216–219, 2007.
- [1607] K. Mehlhorn, editor. *Algorithm Engineering, 2nd International Workshop, WAE’92*, 1998. Max-Planck-Institut für Informatik, Saarbrücken, Germany.
- [1608] 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.
- [1609] J. F. Meier and U. Clausen. **A versatile heuristic approach for generalized hub location problems.** Preprint, Provided upon personal request, 2014.
- [1610] 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.
- [1611] 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.
- [1612] 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.
- [1613] 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.

- [1614] 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.
- [1615] 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.
- [1616] 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.
- [1617] O. J. Mengshoel. **Understanding the role of noise in stochastic local search: Analysis and experiments**. *Artificial Intelligence*, 172(8):955–990, 2008.
- [1618] 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](https://doi.org/10.1145/1229735.1229737).
- [1619] 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.
- [1620] 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.
- [1621] D. Merkle and M. Middendorf. **Modeling the Dynamics of Ant Colony Optimization**. *Evolutionary Computation*, 10(3):235–262, 2002.
- [1622] D. Merkle and M. Middendorf. **Ant Colony Optimization with Global Pheromone Evaluation for Scheduling a Single Machine**. *Applied Intelligence*, 18(1):105–111, 2003.
- [1623] D. Merkle, M. Middendorf, and H. Schmeck. **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.
- [1624] D. Merkle, M. Middendorf, and H. Schmeck. **Ant Colony Optimization for Resource-Constrained Project Scheduling**. *IEEE Transactions on Evolutionary Computation*, 6(4):333–346, 2002.
- [1625] 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.
- [1626] 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>.
- [1627] 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.

- [1628] 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.
- [1629] P. Merz and B. Freisleben. **Memetic Algorithms for the Traveling Salesman Problem.** *Complex Systems*, 13(4):297–345, 2001.
- [1630] 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](https://doi.org/10.1023/A:1017912624016).
- [1631] 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.
- [1632] 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.
- [1633] 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](https://doi.org/10.1016/j.biosystems.2004.08.002).
- [1634] 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](https://doi.org/10.1016/j.eswa.2014.10.039).  
*Keywords:* irace.
- [1635] 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.
- [1636] N. Meuleau and M. Dorigo. **Ant Colony Optimization and Stochastic Gradient Descent.** *Artificial Life*, 8(2):103–121, 2002.
- [1637] B. Meyer. **Convergence control in ACO.** In *Genetic and Evolutionary Computation Conference (GECCO)*, Seattle, WA, 2004. Late-breaking paper available on CD.
- [1638] 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.
- [1639] 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](https://doi.org/10.1145/1143997.1144086).
- [1640] 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](https://doi.org/10.1007/978-3-540-68830-3_7).
- [1641] 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.



- [1642] MIC. *Proceedings of MIC 2013, the 10th Metaheuristics International Conference*, 2013.
- [1643] Z. Michalewicz. *Genetic Algorithms + Data Structures = Evolution Programs*. Springer, Berlin, Germany, 3rd edition, 1996.
- [1644] Z. Michalewicz and D. B. Fogel. *How to Solve It: Modern Heuristics*. Springer, 2nd edition, 2004.
- [1645] 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.
- [1646] 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.
- [1647] 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.
- [1648] 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.
- [1649] 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.
- [1650] K. Miettinen. *Nonlinear Multiobjective Optimization*. Kluwer Academic Publishers, 1999.
- [1651] K. Miettinen. **Survey of methods to visualize alternatives in multiple criteria decision making problems**. *OR Spectrum*, 36(1):3–37, 2014.
- [1652] 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.
- [1653] K. Miettinen, J. Mustajoki, and T. J. Stewart. **Interactive multiobjective optimization with NIMBUS for decision making under uncertainty**. *OR Spectrum*, 36(1):39–56, 2014.
- [1654] 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.
- [1655] 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.
- [1656] 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.
- [1657] S. Minton. **Automatically configuring constraint satisfaction programs: A case study**. *Constraints*, 1(1):7–43, 1996. doi:10.1007/BF00143877.

- [1658] 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>.
- [1659] 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>.
- [1660] 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.
- [1661] 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.
- [1662] A. Misevičius. **A modified simulated annealing algorithm for the quadratic assignment problem**. *Informatica*, 14(4):497–514, 2003.
- [1663] 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.
- [1664] 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.
- [1665] ML4AAD Group. **SMAC v3 Project**. <https://github.com/automl/SMAC3>, 2017. Version visited last on August 2017.
- [1666] N. Mladenović and P. Hansen. **Variable Neighborhood Search**. *Computers & Operations Research*, 24(11):1097–1100, 1997.
- [1667] 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, ICML 2008*, pages 672–679. ACM Press, New York, NY, 2008.
- [1668] 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.
- [1669] J. Mockus. *Bayesian Approach to Global Optimization: Theory and Applications*. Kluwer Academic Publishers, 1989.
- [1670] J. Mockus, V. Tiesis, and A. Zilinskas. **The application of bayesian methods for seeking the extremum**. *Towards global optimization*, pages 117–129, 1978.  
Annotation: Proposed Bayesian optimization.
- [1671] 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.

- [1672] T. M. Moldovan and P. Abbeel. **Safe Exploration in Markov Decision Processes**. In J. Langford and J. Pineau, editors, *Proceedings of the 29th International Conference on Machine Learning, ICML 2012*, pages 1451–1458. Omnipress, 2012.
- [1673] 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.
- [1674] 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.
- [1675] 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.
- [1676] 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.
- [1677] 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.
- [1678] 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.
- [1679] 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.
- [1680] 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.
- [1681] 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.
- [1682] 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.
- [1683] 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.
- [1684] 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.

- [1685] 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).
- [1686] D. C. Montgomery. *Design and Analysis of Experiments*. John Wiley & Sons, New York, NY, 8th edition, 2012.
- [1687] J. Montgomery. *Solution Biases and Pheromone Representation Selection in Ant Colony Optimisation*. PhD thesis, School of Information Technology, Bond University, Australia, 2005.
- [1688] 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).
- [1689] 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.
- [1690] 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, ICML 1994*, pages 190–198, San Francisco, CA, 1994. Morgan Kaufmann Publishers.
- [1691] 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.
- [1692] 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.
- [1693] 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.
- [1694] 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.
- [1695] 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.
- [1696] 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.
- [1697] 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.
- [1698] 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.

- [1699] 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.
- [1700] J. N. Morse. **Reducing the size of the nondominated set: Pruning by clustering**. *Computers & Operations Research*, 7(1-2):55–66, 1980.
- [1701] P. Moscato. **On Evolution, Search, Optimization, Genetic Algorithms and Martial Arts: Towards Memetic Algorithms**. Caltech Concurrent Computation Program, C3P Report 826, Caltech, 1989.
- [1702] 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.
- [1703] P. Moscato and J. F. Fontanari. **Stochastic Versus Deterministic Update in Simulated Annealing**. *Physics Letters A*, 146(4):204–208, 1990.
- [1704] 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.
- [1705] 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.
- [1706] J. Mote, D. L. Olson, and M. A. Venkataramanan. **A comparative multiobjective programming study**. *Mathematical and Computer Modelling*, 10(10):719–729, 1988. doi:10.1016/0895-7177(88)90085-4.  
*Keywords:* artificial DM, interactive.  
*Annotation:* The purpose of this study was to systematically evaluate a number of multiobjective programming concepts relative to reflection of utility, assurance of nondominated solutions and practicality for larger problems using conventional software. In the problem used, the nonlinear simulated DM utility function applied resulted in a nonextreme point solution. Very often, the preferred solution could end up being an extreme point solution, in which case the techniques relying upon LP concepts would work as well if not better than utilizing constrained objective attainments. The point is that there is no reason to expect linear or near linear utility.
- [1707] L. Mousin, M.-E. Kessaci, and C. Dhaenens. **Exploiting Promising Sub-Sequences of Jobs to solve the No-Wait Flowshop Scheduling Problem**. *Arxiv preprint arXiv:1903.09035*, 2019. URL <http://arxiv.org/abs/1903.09035>.
- [1708] V. Mousseau. *Elicitation des préférences pour l'aide multicritère à la décision*. PhD thesis, Université Paris-Dauphine, Paris, France, 2003.
- [1709] V. Mousseau and R. Słowiński. **Inferring an ELECTRE TRI model from assignment examples**. *Journal of Global Optimization*, 12(2):157–174, 1998.
- [1710] 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.
- [1711] J. Moy. **RFC 1583: Open shortest path first protocol**, 1994.
- [1712] 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.



- [1713] 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.
- [1714] 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.
- [1715] F. Mueller, editor. *Proceedings of the 2011 IEEE International Parallel & Distributed Processing Symposium, IPDPS '11*, 2011. IEEE Computer Society.
- [1716] 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.
- [1717] H. Mühlenbein and D. Schlierkamp-Voosen. **Predictive models for the breeder genetic algorithm**. *Evolutionary Computation*, 1(1):25–49, 1993.  
Keywords: crossover, intermediate, line.
- [1718] M. Mühlenthaler. *Fairness in academic course timetabling*. Springer, 2015. doi:10.1007/978-3-319-12799-6.  
Keywords: irace.
- [1719] 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/EVCO\_a\_00086.
- [1720] 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.
- [1721] 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.
- [1722] J. Mylopoulos and R. Reiter, editors. *IJCAI 1991, Proceedings of the 12th International Joint Conference on Artificial Intelligence, IJCAI 91, Sydney, Australia, August 24-30, 1991*. Morgan Kaufmann Publishers, 1995.
- [1723] NAFIPS. *Proceedings of the NAFIPS-FLINT International Conference'2002*, Piscataway, New Jersey, June 2002. IEEE Service Center.
- [1724] 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.
- [1725] 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.
- [1726] Y. Nagata and S. Kobayashi. **An analysis of edge assembly crossover for the traveling salesman problem**. In K. Ito, F. Harashima, and K. Tanie, editors, *IEEE SMC'99 Conference Proceedings, 1999 IEEE International Conference on Systems, Man, and Cybernetics*, pages 628–633. IEEE Press, 1999. doi:10.1109/icsmc.1999.823285.

- [1727] 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](https://doi.org/10.1287/ijoc.1120.0506).  
Keywords: TSP, EAX, evolutionary algorithms.
- [1728] Y. Nagata and D. Soler. **A New Genetic Algorithm for the Asymmetric TSP.** *Expert Systems with Applications*, 39(10):8947–8953, 2012.
- [1729] 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.
- [1730] 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 2010*, pages 807–814, New York, NY, 2010. ACM Press.
- [1731] 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](https://doi.org/10.1007/978-3-319-10762-2_10).
- [1732] 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](https://doi.org/10.1145/1143997.1144029).  
Keywords: REVAC.
- [1733] 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.
- [1734] K. Naono, K. Teranishi, J. Cavazos, and R. Suda, editors. *Software Automatic Tuning: From Concepts to State-of-the-Art Results*. Springer, 2010.
- [1735] 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.
- [1736] 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](https://doi.org/10.1007/978-3-642-32964-7_40).
- [1737] 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.
- [1738] B. Nebel, editor. *IJCAI 2001, Proceedings of the 17th International Joint Conference on Artificial Intelligence*, 2001. IEEE Press.
- [1739] 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.

- [1740] 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. ISBN 978-1-4503-6748-6. doi:10.1145/3319619.3326832.
- [1741] G. L. Nemhauser and L. A. Wolsey. *Integer and Combinatorial Optimization*. John Wiley & Sons, New York, NY, 1988.
- [1742] F. Neri, C. Cotta, and P. Moscato. *Handbook of Memetic Algorithms*, volume 379 of *Studies in Computational Intelligence*. Springer, 2011.
- [1743] F. Neri 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.
- [1744] F. Neumann and C. Witt. **Runtime Analysis of a Simple Ant Colony Optimization Algorithm**. *Electronic Colloquium on Computational Complexity (ECCC)*, 13(084), 2006.
- [1745] 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.
- [1746] A. Newell and H. A. Simon. **Computer Science as Empirical Inquiry: Symbols and Search**. *Communications of the ACM*, 19(3):113–126, Mar. 1976. ISSN 0001-0782. doi:10.1145/360018.360022.  
*Keywords:* cognition, Turing, search, problem solving, symbols, heuristics, list processing, computer science, artificial intelligence, science, empirical.
- [1747] 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.
- [1748] 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.
- [1749] 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.
- [1750] 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.
- [1751] 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.
- [1752] 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.
- [1753] 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, 2nd edition, 2010.
- [1754] 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.

- [1755] 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.
- [1756] 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.
- [1757] M. S. Nixon and A. S. Aguado. *Feature extraction & image processing for computer vision*. Academic Press, New York, NY, 2012.
- [1758] J. Nocedal and S. J. Wright. *Numerical Optimization*. Springer Series in Operations Research and Financial Engineering. Springer, 2nd edition, 2006.
- [1759] 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.
- [1760] B. A. Nosek, G. Alter, G. C. Banks, D. Borsboom, S. D. Bowman, S. J. Breckler, S. Buck, C. D. Chambers, G. Chin, G. Christensen, M. Contestabile, A. Dafoe, E. Eich, J. Freese, R. Glennerster, D. Goroff, D. P. Green, B. Hesse, M. Humphreys, J. Ishiyama, D. Karlan, A. Kraut, A. Lupia, P. Mabry, T. Madon, N. Malhotra, E. Mayo-Wilson, M. McNutt, E. Miguel, E. L. Paluck, U. Simonsohn, C. Soderberg, B. A. Spellman, J. Turitto, G. VandenBos, S. Vazire, E. J. Wagenmakers, R. Wilson, and T. Yarkoni. **Promoting an open research culture**. *Science*, 348(6242):1422–1425, June 2015. doi:10.1126/science.aab2374.
- [1761] B. A. Nosek, C. R. Ebersole, A. C. DeHaven, and D. T. Mellor. **The Preregistration Revolution**. *Proceedings of the National Academy of Sciences*, 115(11):2600–2606, Mar. 2018. ISSN 0027-8424, 1091-6490. doi:10.1073/pnas.1708274114.
- [1762] Y. Nourani and B. Andresen. **A Comparison of Simulated Annealing Cooling Strategies**. *Journal of Physics A*, 31(41):8373–8385, 1998.
- [1763] 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.
- [1764] 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.
- [1765] E. Nowicki and C. Smutnicki. **A Fast Taboo Search Algorithm for the Job Shop Problem**. *Management Science*, 42(6):797–813, 1996.
- [1766] 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.
- [1767] S. Obayashi and D. Sasaki. **Visualization and data mining of Pareto solutions using self-organizing map**. 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 796–809. Springer, Heidelberg, Germany, 2003.

- [1768] 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.
- [1769] 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.
- [1770] 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.
- [1771] 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.
- [1772] 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.
- [1773] 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.
- [1774] 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.
- [1775] 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, *Proceedings of PPSN XIV, 14th International Conference on Parallel Problem Solving from Nature*, 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.  
*Keywords:* artificial DMs.  
*Annotation:* In this research, we proposed to build an automated framework for testing interactive multiobjective optimization methods, without utilizing a value function to represent the DM’s preferences. This was achieved by replacing the human DM with an artificial DM constructed from two distinct parts: the steady part and the current context. With the steady part the artificial DM tries to maintain the search towards its preferences, while at the same time the current context allows changing the direction as well as ending the solution process prematurely, mimicking actions of a human DM.
- [1776] 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.
- [1777] 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.
- [1778] 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.



- [1779] 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.
- [1780] 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).
- [1781] 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).
- [1782] 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.
- [1783] M. O’Neill and C. Ryan. **Grammatical Evolution.** *IEEE Transactions on Evolutionary Computation*, 5(4):349–358, 2001.
- [1784] 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.
- [1785] 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.
- [1786] 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.
- [1787] J. E. Orosz and S. H. Jacobson. **Analysis of Static Simulated Annealing Algorithms.** *Journal of Optimization Theory and Applications*, 115(1):165–182, 2002.
- [1788] OscaR Team. **OscaR: Scala in OR**, 2012. Available from <https://bitbucket.org/oscarlib/oscar>.
- [1789] I. H. Osman and C. N. Potts. **Simulated Annealing for Permutation Flow-Shop Scheduling.** *Omega*, 17(6):551–557, 1989.
- [1790] 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.
- [1791] 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.
- [1792] P. S. Ow and T. E. Morton. **Filtered Beam Search in Scheduling.** *International Journal of Production Research*, 26:297–307, 1988.
- [1793] 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.
- [1794] 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.
- [1795] 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.

- [1796] PACT. *Proceedings of the 23rd International Conference on Parallel Architectures and Compilation*, New York, NY, 2014. ACM Press.
- [1797] 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.
- [1798] 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).
- [1799] 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).
- [1800] 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>.
- [1801] 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.
- [1802] 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](https://doi.org/10.1016/j.ejor.2019.01.018).
- [1803] 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.
- [1804] 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.
- [1805] 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.
- [1806] 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.
- [1807] 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.
- [1808] 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.
- [1809] 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.
- [1810] 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.

- [1811] 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.
- [1812] C. H. Papadimitriou and K. Steiglitz. *Combinatorial Optimization – Algorithms and Complexity*. Prentice Hall, Englewood Cliffs, NJ, 1982.
- [1813] 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.
- [1814] 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.
- [1815] L. Paquete. *Stochastic Local Search Algorithms for Multiobjective Combinatorial Optimization: Methods and Analysis*. PhD thesis, FB Informatik, TU Darmstadt, Germany, 2005.
- [1816] 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.
- [1817] 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.
- [1818] 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.
- [1819] 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.
- [1820] 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.
- [1821] 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.
- [1822] 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 177–199. Springer, Berlin, Germany, 2004. doi:10.1007/978-3-642-17144-4\_7.  
Keywords: Pareto local search, PLS.

- [1823] 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>.
- [1824] 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.
- [1825] L. Paquete, M. Chiarandini, and D. Basso, editors. *Empirical Methods for the Analysis of Algorithms, Workshop EMAA 2006, Proceedings*, Reykjavik, Iceland, 2006.
- [1826] 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 [219].  
*Annotation:* Proof of Theorem 3.1 is incorrect.
- [1827] 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.
- [1828] 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).
- [1829] P. M. Pardalos and D.-Z. Du, editors. *Handbook of Combinatorial Optimization*, volume 2. Kluwer Academic Publishers, 1998.
- [1830] 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.
- [1831] 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.
- [1832] 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.
- [1833] 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.
- [1834] 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.
- [1835] R. O. Parreiras and J. A. Vascocelos. **A multiplicative version of PROMETHEE II applied to multiobjective optimization problems**. *European Journal of Operational Research*, 183: 729–740, 2007.

- [1836] 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](https://doi.org/10.1080/01966324.1997.10737444).
- [1837] G. Paul. **Comparative performance of tabu search and simulated annealing heuristics for the quadratic assignment problem.** *Operations Research Letters*, 38(6):577–581, 2010.
- [1838] 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.
- [1839] 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. doi:[10.1145/3321707](https://doi.org/10.1145/3321707).
- [1840] G. S. Peace. *Taguchi Methods: A Hands-On Approach*. Addison-Wesley, 1993.
- [1841] J. Pearl. *Heuristics: Intelligent Search Strategies for Computer Problem Solving*. Addison-Wesley, Reading, MA, 1984.
- [1842] J. Pearl. *Causality: Models, Reasoning and Inference*. Cambridge University Press, 2nd edition, 2009.
- [1843] D. W. Pearson, N. C. Steele, and R. F. Albrecht, editors. *Artificial Neural Networks and Genetic Algorithms*. Springer Verlag, 2003.
- [1844] M. Pedemonte, S. Nesmachnow, and H. Cancela. **A survey on parallel ant colony optimization.** *Applied Soft Computing*, 11(8):5181–5197, 2011.
- [1845] 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.
- [1846] 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.
- [1847] 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.
- [1848] 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.
- [1849] 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.
- [1850] 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.



- [1851] 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.
- [1852] 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.
- [1853] 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.
- [1854] 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.
- [1855] 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.
- [1856] 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.
- [1857] 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.
- [1858] 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.
- [1859] 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.
- [1860] 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>.
- [1861] 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>.
- [1862] 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.

- [1863] 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/>.
- [1864] 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.
- [1865] 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, 2017.
- [1866] 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.
- [1867] J. M. Perkel. **Challenge to scientists: does your ten-year-old code still run?** *Nature*, 584:556–658, 2020. doi:10.1038/d41586-020-02462-7.   
Keywords: reproducibility; software engineering; ReScience C; Ten Years Reproducibility Challenge; code reusability.   
Annotation: <https://www.nature.com/articles/d41586-020-02462-7>.
- [1868] 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.
- [1869] 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.
- [1870] 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.
- [1871] 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.
- [1872] S. Phelps and M. Köksalan. **An interactive evolutionary metaheuristic for multiobjective combinatorial optimization**. *Management Science*, 49(12):1726–1738, 2003.
- [1873] 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.
- [1874] M. L. Pinedo. *Scheduling: Theory, Algorithms, and Systems*. Springer, New York, NY, 4th edition, 2012.
- [1875] 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.

- [1876] D. Pisinger and S. Ropke. **A General Heuristic for Vehicle Routing Problems.** *Computers & Operations Research*, 34(8):2403–2435, 2007.
- [1877] 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, 2nd edition, 2010.
- [1878] 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.
- [1879] 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.
- [1880] H. E. Plessner. **Reproducibility vs. Replicability: A Brief History of a Confused Terminology.** *Frontiers in Neuroinformatics*, 11, Jan. 2018. doi:[10.3389/fninf.2017.00076](https://doi.org/10.3389/fninf.2017.00076).
- [1881] 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).
- [1882] 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.
- [1883] 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.
- [1884] 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).
- [1885] 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.
- [1886] 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.
- [1887] 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>.
- [1888] 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.
- [1889] 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](https://doi.org/10.1007/s10732-014-9279-5).

- [1890] T. D. Prasad. **Design of pumped water distribution networks with storage.** *Journal of Water Resources Planning and Management, ASCE*, 136(4):129–136, 2009.
- [1891] 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.
- [1892] F. P. Preparata and M. I. Shamos. *Computational Geometry. An Introduction*. Springer, Berlin, Germany, 2nd edition, 1988.
- [1893] 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.
- [1894] A. Prieditis and S. Russell, editors. *Proceedings of the Twelfth International Conference on Machine Learning (ML-95)*. Morgan Kaufmann Publishers, Palo Alto, CA, 1995.
- [1895] 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.
- [1896] 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.
- [1897] 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.
- [1898] H. N. Psaraftis. **Dynamic Vehicle Routing: Status and Prospects.** *Annals of Operations Research*, 61:143–164, 1995.
- [1899] 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.
- [1900] L. Pulina and A. Tacchella. **A self-adaptive multi-engine solver for quantified Boolean formulas.** *Constraints*, 14(1):80–116, 2009.
- [1901] 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.
- [1902] 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.
- [1903] 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.
- [1904] 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.

- [1905] 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](https://doi.org/10.1007/978-3-319-99259-4_22).
- [1906] J. D. Quinn, P. M. Reed, and K. Keller. **Direct policy search for robust multi-objective management of deeply uncertain socio-ecological tipping points.** *Environmental Modelling & Software*, 92:125–141, 2017.
- [1907] 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.
- [1908] S. F. Rad, R. Ruiz, and N. Boroojerdian. **New High Performing Heuristics for Minimizing Makespan in Permutation Flowshops.** *Omega*, 37(2):331–345, 2009.
- [1909] 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 [[1910](#)].
- [1910] 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](https://doi.org/10.1007/978-3-642-37140-0_61).
- [1911] 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.
- [1912] 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.
- [1913] 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.
- [1914] C. Rajendran. **Heuristic algorithm for scheduling in a flowshop to minimize total flowtime.** *International Journal of Production Economics*, 29(1):65–73, 1993.
- [1915] 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).
- [1916] 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.
- [1917] 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.
- [1918] 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>.



- [1919] 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.
- [1920] 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.
- [1921] 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.
- [1922] 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.
- [1923] 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.
- [1924] 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.
- [1925] R. L. Rardin and R. Uzsoy. **Experimental Evaluation of Heuristic Optimization Algorithms: A Tutorial.** *Journal of Heuristics*, 7(3):261–304, 2001.
- [1926] 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.  
*Keywords:* irace.
- [1927] C. E. Rasmussen and C. K. I. Williams. *Gaussian Processes for Machine Learning*. MIT Press, Cambridge, MA, 2006. ISBN 026218253X.  
*Keywords:* Gaussian processes, data processing.
- [1928] G. Rawlins, editor. *Foundations of Genetic Algorithms*. Morgan Kaufmann Publishers, San Mateo, CA, 1991.
- [1929] N. Rayner. **Maverick Research: Judgment Day, or Why We Should Let Machines Automate Decision Making.** Gartner research note, Gartner, Inc, Oct. 2011.
- [1930] 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>.
- [1931] I. Rechenberg. *Evolutionsstrategie: Optimierung technischer Systeme nach Prinzipien der biologischen Evolution*. PhD thesis, Department of Process Engineering, Technical University of Berlin, 1971.
- [1932] I. Rechenberg. *Evolutionsstrategie: Optimierung technischer Systeme nach Prinzipien der biologischen Evolution*. Frommann-Holzboog, Stuttgart, Germany, 1973.

- [1933] 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.
- [1934] 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.
- [1935] 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.
- [1936] 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, 2nd edition, 2010.
- [1937] C. R. Reeves and A. V. Eremeev. **Statistical analysis of local search landscapes.** *Journal of the Operational Research Society*, 55(7):687–693, 2004.
- [1938] G. R. Reeves and J. J. Gonzalez. **A comparison of two interactive MCDM procedures.** *European Journal of Operational Research*, 41(2):203–209, 1989. doi:10.1016/0377-2217(89)90385-8.  
*Keywords:* artificial DM, interactive.
- [1939] 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.
- [1940] 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.
- [1941] 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.
- [1942] G. Reinelt. **TSPLIB — A Traveling Salesman Problem Library.** *ORSA Journal on Computing*, 3(4):376–384, 1991.
- [1943] G. Reinelt. *The Traveling Salesman: Computational Solutions for TSP Applications*, volume 840 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 1994.
- [1944] G. Reinelt. **TSPLIB.** <http://www.iwr.uni-heidelberg.de/groups/comopt/software/TSPLIB95>, 1995. Version visited last on 15 June 2012.
- [1945] 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.
- [1946] 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.
- [1947] 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.

- [1948] 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, 2nd edition, 2010.
- [1949] 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.
- [1950] C. W. Reynolds. **Flocks, Herds, and Schools: A Distributed Behavioral Model.** *ACM Computer Graphics*, 21(4):25–34, 1987.
- [1951] 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.
- [1952] 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.
- [1953] 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.
- [1954] C. C. Ribeiro and S. Urrutia. **Heuristics for the Mirrored Traveling Tournament Problem.** *European Journal of Operational Research*, 179(3):775–787, 2007.
- [1955] J. R. Rice. **The Algorithm Selection Problem.** *Advances in Computers*, 15:65–118, 1976.
- [1956] A. J. Richmond and J. E. Beasley. **An Iterative Construction Heuristic for the Ore Selection Problem.** *Journal of Heuristics*, 10(2):153–167, 2004.
- [1957] 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.
- [1958] 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.
- [1959] 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.
- [1960] 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.
- [1961] C. P. Robert. **Simulation of truncated normal variables.** *Statistics and Computing*, 5(2):121–125, June 1995.
- [1962] 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.

- [1963] 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.
- [1964] 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.
- [1965] F. Romeo and A. Sangiovanni-Vincentelli. **A Theoretical Framework for Simulated Annealing**. *Algorithmica*, 6(1-6):302–345, 1991.
- [1966] P. A. Romero, A. Krause, and F. H. Arnold. **Navigating the Protein Fitness Landscape with Gaussian Processes**. *Proceedings of the National Academy of Sciences*, 110(3):E193–E201, Dec. 2012. doi:10.1073/pnas.1215251110.  
*Keywords:* Combinatorial Black-box Expensive.
- [1967] D. S. Roos. **Bioinformatics—trying to swim in a sea of data**. *Science*, 291(5507):1260–1261, 2001.
- [1968] 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.
- [1969] 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.
- [1970] 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.
- [1971] 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.
- [1972] 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.
- [1973] L. A. Rossman. *EPANET User’s Guide*. Risk Reduction Engineering Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, USA, 1994.
- [1974] 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.
- [1975] L. A. Rossman. *EPANET 2 Users Manual*. U.S. Environmental Protection Agency, Cincinnati, USA, 2000.
- [1976] F. Rothlauf, editor. *Genetic and Evolutionary Computation Conference, GECCO 2009, Proceedings, Montreal, Québec, Canada, July 8-12, 2009*. ACM Press, New York, NY, 2009.
- [1977] 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.

- [1978] 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>.
- [1979] 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.
- [1980] 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.
- [1981] 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.
- [1982] 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.
- [1983] A. B. Ruiz, M. Luque, K. Miettinen, and R. Saborido. **An Interactive Evolutionary Multiobjective Optimization Method: Interactive WASF-GA.** 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 249–263. Springer International Publishing, 2015. doi:10.1007/978-3-319-15892-1\_17.
- [1984] R. Ruiz and C. Maroto. **A Comprehensive Review and Evaluation of Permutation Flowshop Heuristics.** *European Journal of Operational Research*, 165(2):479–494, 2005.
- [1985] 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.
- [1986] 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.
- [1987] 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.
- [1988] 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.
- [1989] 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.
- [1990] 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.
- [1991] R. A. Russell. **Hybrid Heuristics for the Vehicle Routing Problem with Time Windows.** *Transportation Science*, 29(2):156–166, 1995.
- [1992] 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.



- [1993] C. Ryan, editor. *Genetic and Evolutionary Computation Conference, GECCO 2008, Proceedings, Atlanta, Georgia, USA July 12-16, 2008*. ACM Press, New York, NY, 2008.
- [1994] 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.
- [1995] 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.
- [1996] 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.
- [1997] M. Sacher, R. Duvigneau, O. Le Maitre, M. Durand, E. Berrini, F. Hauville, and J.-A. Astolfi. **A classification approach to efficient global optimization in presence of non-computable domains**. *Structural and Multidisciplinary Optimization*, 58(4):1537–1557, 2018. [doi:10.1007/s00158-018-1981-8](https://doi.org/10.1007/s00158-018-1981-8).  
*Keywords:* Safe optimization; CMA-ES, Gaussian processes; Least-Squares Support Vector Machine.  
*Annotation:* Proposed EGO-LS-SVM.
- [1998] P. J. Sadalage and M. Fowler. **NoSQL distilled**. *AddisonWesley Professional*, 2012.
- [1999] 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. ISBN 978-1-4503-6748-6. [doi:10.1145/3319619.3326890](https://doi.org/10.1145/3319619.3326890).
- [2000] 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.
- [2001] 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.
- [2002] 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.
- [2003] 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](https://doi.org/10.1016/j.trb.2016.01.005).  
*Keywords:* irace.
- [2004] 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.
- [2005] 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](https://doi.org/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.

- [2006] 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).
- [2007] 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.
- [2008] A. Santini, S. Ropke, and L. M. Hvattum. **A comparison of acceptance criteria for the adaptive large neighbourhood search metaheuristic.** *Journal of Heuristics*, 24:783–815, 2018. [doi:10.1007/s10732-018-9377-x](https://doi.org/10.1007/s10732-018-9377-x).
- [2009] 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).
- [2010] 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.
- [2011] 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).
- [2012] 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.
- [2013] 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. Berlin, Germany, 1997.
- [2014] 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.
- [2015] Y. Sawaragi, H. Nakayama, and T. Tanino. *Theory of multiobjective optimization*. Elsevier, 1985.
- [2016] 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.
- [2017] 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.
- [2018] 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.
- [2019] 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.

- [2020] 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.
- [2021] J. C. Schank and T. J. Koehnle. **Pseudoreplication is a pseudoproblem**. *Journal of Comparative Psychology*, 123(4):421–433, 2009.
- [2022] H. Scheffe. *The Analysis of Variance*. John Wiley & Sons, New York, NY, 1st edition, 1959.
- [2023] 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.
- [2024] T. Schiavinotto and T. Stützle. **A Review of Metrics on Permutations for Search Space Analysis**. *Computers & Operations Research*, 34(10):3143–3153, 2007.
- [2025] 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.
- [2026] M. Schillinger, B. Hartmann, P. Skalecki, M. Meister, D. Nguyen-Tuong, and O. Nelles. **Safe active learning and safe Bayesian optimization for tuning a PI-controller**. *IFAC-PapersOnLine*, 50(1):5967–5972, 2017. doi:10.1016/j.ifacol.2017.08.1258.
- [2027] M. Schillinger, B. Ortelt, B. Hartmann, J. Schreiter, M. Meister, D. Nguyen-Tuong, and O. Nelles. **Safe active learning of a high pressure fuel supply system**. In *Proceedings of the 9th EUROSIM Congress on Modelling and Simulation, EUROSIM 2016 and the 57th SIMS Conference on Simulation and Modelling SIMS 2016*, pages 286–292. Linköping University Electronic Press, 2018. doi:10.3384/ecp17142286.
- [2028] 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.
- [2029] 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.
- [2030] M. Schmidt, A. Schöbel, and L. Thom. **Min-ordering and max-ordering scalarization methods for multi-objective robust optimization**. *European Journal of Operational Research*, 275(2):446–459, 2019.
- [2031] 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.
- [2032] 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.
- [2033] 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.

- [2034] 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.
- [2035] G. R. Schreiber and O. Martin. **Cut Size Statistics of Graph Bisection Heuristics.** *SIAM Journal on Optimization*, 10(1):231–251, 1999.
- [2036] J. Schreiter, D. Nguyen-Tuong, M. Eberts, B. Bischoff, H. Markert, and M. Toussaint. **Safe Exploration for Active Learning with Gaussian Processes.** In *Machine Learning and Knowledge Discovery in Databases, ECML PKDD 2015*, volume 9286 of *Lecture Notes in Computer Science*, pages 133–149. Springer, 2015. doi:10.1007/978-3-319-23461-8\_9. Annotation: Proposed Safe Active Learning (SAL) algorithm.
- [2037] T. Schrijvers, G. Tack, P. Wuille, H. Samulowitz, and P. J. Stuckey. **Search Combinators.** *Constraints*, 18(2):269–305, 2013.
- [2038] 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.
- [2039] 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.
- [2040] 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.
- [2041] E. Schulz, M. Speekenbrink, and A. Krause. **A tutorial on Gaussian process regression: Modelling, exploring, and exploiting functions.** *Journal of Mathematical Psychology*, 85: 1–16, Aug. 2018. doi:10.1016/j.jmp.2018.03.001.
- [2042] 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.
- [2043] 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.
- [2044] 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.
- [2045] 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.
- [2046] 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.
- [2047] 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.

- [2048] H.-P. Schwefel. *Numerische Optimierung von Computer-Modellen mittels der Evolutionsstrategie*. Birkhäuser, Basel, Switzerland, 1977.
- [2049] 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.
- [2050] S. Scott and S. Matwin. **Feature engineering for text classification**. In *ICML*, volume 99, pages 379–388, 1999.
- [2051] 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.
- [2052] 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.
- [2053] 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.
- [2054] 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.
- [2055] 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.
- [2056] 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.
- [2057] 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.
- [2058] 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.
- [2059] 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.
- [2060] 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](https://doi.org/10.1145/3321707.3321813). Supplementary material: <https://dx.doi.org/10.5281/zenodo.2628228>.

*Keywords:* DE-DDQN.

- [2061] 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.
- [2062] B. Shavazipour. *Multi-Objective Optimisation under Deep Uncertainty*. PhD thesis, UCT Statistical sciences, South Africa, 2018.
- [2063] B. Shavazipour and T. J. Stewart. **Multi-objective optimisation under deep uncertainty.** *Operational Research*, Sept. 2019. [doi:10.1007/s12351-019-00512-1](https://doi.org/10.1007/s12351-019-00512-1).
- [2064] 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.
- [2065] 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.
- [2066] 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.
- [2067] V. Y. Shen, N. Saito, M. R. Lyu, and M. E. Zurko, editors. *Proceedings of the Tenth International World Wide Web Conference, WWW 10, Hong Kong, China, May 1-5, 2001*. ACM Press, New York, NY, 2001. ISBN 1-58113-348-0.
- [2068] D. J. Sheskin. *Handbook of Parametric and Nonparametric Statistical Procedures*. Chapman & Hall/CRC, 2nd edition, 2000.
- [2069] D. J. Sheskin. *Handbook of Parametric and Nonparametric Statistical Procedures*. Chapman & Hall/CRC, 5th edition, 2011.
- [2070] 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](https://doi.org/10.1007/BFb0040753).
- [2071] 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.
- [2072] M. D. Shields and J. Zhang. **The generalization of Latin hypercube sampling.** *Reliability Engineering & System Safety*, 148:96–108, 2016.
- [2073] B. Shipley. *Cause and Correlation in Biology: a User’s Guide to Path Analysis, Structural Equations and Causal Inference*. Cambridge University Press, 1st edition, 2000.
- [2074] 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](https://doi.org/10.1007/s11047-007-9065-5).

- [2075] 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](https://doi.org/10.1186/1471-2105-6-30).
- [2076] 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.
- [2077] 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>.
- [2078] J. N. Siddall. *Optimal Engineering Design: Principles and Applications*. Marcel Dekker Inc., New York, NY, 1982.
- [2079] S. Siegel and N. J. Castellan, Jr. *Non Parametric Statistics for the Behavioral Sciences*. McGraw Hill, New York, NY, 2nd edition, 1988.
- [2080] 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.
- [2081] 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.
- [2082] 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.
- [2083] P. V. Silvestrin and M. Ritt. **An Iterated Tabu Search for the Multi-compartment Vehicle Routing Problem.** *Computers & Operations Research*, 81:192–202, 2017.
- [2084] 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/EVCO\\_a\\_00121](https://doi.org/10.1162/EVCO_a_00121).
- [2085] J. P. Simmons, L. D. Nelson, and U. Simonsohn. **False-Positive Psychology: Undisclosed Flexibility in Data Collection and Analysis Allows Presenting Anything as Significant.** *Psychological Science*, 2011. URL <https://ssrn.com/abstract=1850704>. Annotation: Proposed the term p-hacking.
- [2086] H. A. Simon. **A Behavioral Model of Rational Choice.** *The Quarterly Journal of Economics*, 69(1):99–118, 1955.
- [2087] 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](https://doi.org/10.1007/s11721-014-0093-3). Keywords: irace.
- [2088] 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.
- [2089] 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.

- [2090] 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.
- [2091] 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.
- [2092] R. Slowiński. **Inducing preference models from pairwise comparisons: implications for preference-guided EMO**. Evolutionary Multi-Criterion Optimization, EMO 2011, 2011. Keynote talk.
- [2093] 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.
- [2094] 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.
- [2095] 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](https://doi.org/10.1109/CEC.2010.5586026).
- [2096] 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](https://doi.org/10.1007/978-3-642-12239-2_56).
- [2097] S. K. Smit and A. E. Eiben. **Multi-Problem Parameter Tuning using BONESA**. 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 222–233. Springer, Heidelberg, Germany, 2012. Annotation: For some reason, this was not actually published in the LNCS Proceedings of EA.
- [2098] 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.
- [2099] J. Smith, C. Stone, and M. Serpell. **Exploiting Diverse Distance Metrics for Surrogate-Based Optimisation of Ordering Problems**. In T. Friedrich, F. Neumann, and A. M. Sutton, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2015*, pages 701–708, New York, NY, 2016. ACM Press. doi:[10.1145/2908812.2908854](https://doi.org/10.1145/2908812.2908854).
- [2100] 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](https://doi.org/10.1109/KBSE.1992.252912).
- [2101] K. Smith-Miles. **Cross-disciplinary Perspectives on Meta-learning for Algorithm Selection**. *ACM Computing Surveys*, 41(1):1–25, 2008.
- [2102] K. Smith-Miles and S. Bowly. **Generating New Test Instances by Evolving in Instance Space**. *Computers & Operations Research*, 63:102–113, 2015.

- [2103] K. Smith-Miles and L. Lopes. **Measuring instance difficulty for combinatorial optimization problems**. *Computers & Operations Research*, 39:875–889, 2012.
- [2104] K. Smith-Miles, J. I. van Hemert, and X. Y. Lim. **Understanding TSP difficulty by Learning from evolved instances**. 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 266–280. Springer, Heidelberg, Germany, 2010. doi:[10.1007/978-3-642-13800-3](https://doi.org/10.1007/978-3-642-13800-3).
- [2105] G. W. Snedecor and W. G. Cochran. *Statistical Methods*. Iowa State University Press, Ames, IA, USA, 6th edition, 1967.
- [2106] 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.
- [2107] 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 31st International Conference on Machine Learning, ICML 2014*, volume 32, pages 1674–1682, 2014. URL <http://jmlr.org/proceedings/papers/v32/>.
- [2108] 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.
- [2109] 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.
- [2110] 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.
- [2111] 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](https://doi.org/10.1016/j.ejor.2006.06.046).  
Keywords: ACOR.  
Annotation: Proposed ACOR (ACO<sub>R</sub>).
- [2112] 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.
- [2113] 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.
- [2114] M. L. Soffa and E. Duesterwald, editors. *Proceedings of the 6th Annual IEEE/ACM International Symposium on Code Generation and Optimization*, CGO '08, New York, NY, 2008. ACM Press.
- [2115] 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.
- [2116] C. Solnon. **Ants Can Solve Constraint Satisfaction Problems**. *IEEE Transactions on Evolutionary Computation*, 6(4):347–357, 2002.

- [2117] C. Solnon. *Ant Colony Optimization and Constraint Programming*. Wiley, 2010. doi:10.1002/9781118557563.
- [2118] M. M. Solomon. **Algorithms for the Vehicle Routing and Scheduling Problems with Time Windows**. *Operations Research*, 35:254–265, 1987.
- [2119] K. Sörensen. **Metaheuristics—the metaphor exposed**. *International Transactions in Operational Research*, 22(1):3–18, 2015. doi:10.1111/itor.12001.
- [2120] 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.
- [2121] 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.
- [2122] 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.
- [2123] 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).
- [2124] A. Sotelo, C. von Lübben, 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.
- [2125] A. Souilah. **Simulated annealing for manufacturing systems layout design**. *European Journal of Operational Research*, 82(3):592–614, 1995.
- [2126] 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.
- [2127] 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.
- [2128] C. Spearman. **The proof and measurement of association between two things**. *The American journal of psychology*, 15(1):72–101, 1904.
- [2129] A. Sprecher, R. Kolisch, and A. Drexler. **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.  
*Keywords:* active schedules, Branch-and-bound methods, non-delay schedules, Resource-constrained project scheduling, Semi-active schedules.
- [2130] A. Sprecher, S. Hartmann, and A. Drexler. **An exact algorithm for project scheduling with multiple modes**. *OR Spektrum*, 19(3):195–203, 1997. doi:10.1007/BF01545587.  
*Keywords:* branch-and-bound, multi-mode resource-constrained project scheduling, project scheduling.
- [2131] 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.



- [2132] N. Srinivas and K. Deb. **Multiobjective Optimization Using Nondominated Sorting in Genetic Algorithms**. *Evolutionary Computation*, 2(3):221–248, 1994.
- [2133] S. Staab and R. Studer, editors. *Handbook on Ontologies*. International Handbooks on Information Systems. Springer, 2009.
- [2134] 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.
- [2135] M. K. Starr. *Product design and decision theory*. Prentice-Hall Series in Engineering Design, Fundamentals of Engineering Design. Prentice-Hall, Englewood, Cliffs, NJ, 1963.
- [2136] 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.
- [2137] B. Steffen and G. Woeginger, editors. *Computing and Software Science: State of the Art and Perspectives*, volume 10000 of *Lecture Notes in Computer Science*. Springer, Cham, 2019.
- [2138] R. E. Steuer. *Multiple Criteria Optimization: Theory, Computation and Application*. Wiley Series in Probability and Mathematical Statistics. John Wiley & Sons, New York, NY, 1986.
- [2139] 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.
- [2140] 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.
- [2141] 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.
- [2142] 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.
- [2143] V. Stodden. **What scientific idea is ready for retirement? Reproducibility**. *Edge*, 2014. URL <https://www.edge.org/annual-question/2014/response/25340>.  
Annotation: Introduces computational reproducibility, empirical reproducibility and statistical reproducibility.
- [2144] V. Stodden, M. McNutt, D. H. Bailey, E. Deelman, Y. Gil, B. Hanson, M. A. Heroux, J. P. A. Ioannidis, and M. Taufer. **Enhancing reproducibility for computational methods**. *Science*, 354(6317):1240–1241, Dec. 2016. doi:10.1126/science.aah6168.
- [2145] V. Stodden, J. Seiler, and Z. Ma. **An empirical analysis of journal policy effectiveness for computational reproducibility**. *Proceedings of the National Academy of Sciences*, 115(11):2584–2589, Mar. 2018. doi:10.1073/pnas.1708290115.

- [2146] 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](https://doi.org/10.1016/j.asoc.2014.07.014).  
Keywords: Evolutionary algorithm,Road traffic,Smart city,Smart mobility,Traffic light,WiFi connections.
- [2147] 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. Baruque, 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](https://doi.org/10.1007/978-3-319-24598-0_30).  
Keywords: Evolutionary algorithm,SUMO,Smart city,Smart mobility,Traffic simulation.
- [2148] 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.
- [2149] D. Stracuzzi 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.
- [2150] P. N. Strenske and S. Kirkpatrick. **Analysis of Finite Length Annealing Schedules.** *Algorithmica*, 6(1-6):346–366, 1991.
- [2151] P. Strycharczuk, M. López-Ibáñez, G. Brown, and A. Leemann. **General Northern English: Exploring regional variation in the North of England with machine learning.** *Frontiers in Artificial Intelligence*, 2020. doi:[10.3389/frai.2020.00048](https://doi.org/10.3389/frai.2020.00048).  
Keywords: vowels, accent features, dialect leveling, Random forest (bagging), Feature selection.
- [2152] 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.
- [2153] 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.
- [2154] 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.
- [2155] T. Stützle. *Local Search Algorithms for Combinatorial Problems — Analysis, Improvements, and New Applications.* PhD thesis, FB Informatik, TU Darmstadt, Germany, 1998.
- [2156] 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>.
- [2157] T. Stützle. **Iterated Local Search for the Quadratic Assignment Problem.** *European Journal of Operational Research*, 174(3):1519–1539, 2006.
- [2158] 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.
- [2159] 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.

- [2160] 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.
- [2161] 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.
- [2162] 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.
- [2163] 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.
- [2164] 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.
- [2165] T. Stützle and H. H. Hoos.  **$MAX-MIN$  Ant System**. *Future Generation Computer Systems*, 16(8):889–914, 2000.
- [2166] 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.
- [2167] 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.
- [2168] 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.
- [2169] 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.
- [2170] 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.
- [2171] 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.
- [2172] 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.
- [2173] 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.

- [2174] 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 [2176].
- [2175] 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.
- [2176] 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.
- [2177] 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.
- [2178] 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.
- [2179] 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.
- [2180] 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.
- [2181] 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).
- [2182] 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, ICML 2015*, volume 37, pages 997–1005, 2015.  
*Keywords*: SafeOpt.
- [2183] 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.  
*Annotation*: Published as [2184].
- [2184] Y. Sui, V. Zhuang, J. W. Burdick, and Y. Yue. **Stagewise Safe Bayesian Optimization with Gaussian Processes**. In J. G. Dy and A. Krause, editors, *Proceedings of the 35th International Conference on Machine Learning, ICML 2018*, volume 80 of *Proceedings of Machine Learning Research*, pages 4788–4796. PMLR, 2018.  
*Keywords*: StageOpt.

- [2185] 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.
- [2186] A. Suppakitnarm, K. A. Seffen, G. T. Parks, and P. J. Clarkson. **A simulated annealing algorithm for multiobjective optimization**. *Engineering Optimization*, 33(1):59–85, 2000.
- [2187] 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.
- [2188] R. S. Sutton and A. G. Barto. *Reinforcement Learning: An Introduction*. MIT PressCambridge, MA, 1998.
- [2189] R. S. Sutton and A. G. Barto. *Reinforcement Learning: An Introduction*. MIT PressCambridge, MA, 2nd edition, 2018.
- [2190] J. A. K. Suykens and J. Vandewalle. **Least Squares Support Vector Machine Classifiers**. *Neural Processing Letters*, 9(3):293–300, 1999. doi:10.1023/A:1018628609742. *Keywords*: LS-SVM.
- [2191] 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.
- [2192] 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.
- [2193] 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.
- [2194] W. R. Swartout, editor. *Proceedings of the 10th National Conference on Artificial Intelligence*, 1992. AAAI Press/MIT Press, Menlo Park, CA.
- [2195] 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.
- [2196] H. Szu and R. Hartley. **Fast Simulated Annealing**. *Physics Letters A*, 122(3):157–162, 1987.
- [2197] 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.
- [2198] 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.
- [2199] É. D. Taillard. **Some Efficient Heuristic Methods for the Flow Shop Sequencing Problem**. *European Journal of Operational Research*, 47(1):65–74, 1990.
- [2200] 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.



- [2201] É. D. Taillard. **Benchmarks for Basic Scheduling Problems.** *European Journal of Operational Research*, 64(2):278–285, 1993.
- [2202] É. D. Taillard. **Comparison of Iterative Searches for the Quadratic Assignment Problem.** *Location Science*, 3(2):87–105, 1995.
- [2203] 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.
- [2204] E.-G. Talbi. **A Taxonomy of Hybrid Metaheuristics.** *Journal of Heuristics*, 8(5):541–564, 2002.
- [2205] 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>.
- [2206] E.-G. Talbi, editor. *Proceedings of MIC 2015, the 11th Metaheuristics International Conference*, 2015.
- [2207] 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.
- [2208] K. Y. Tam. **A Simulated Annealing Algorithm for Allocating Space to Manufacturing Cells.** *International Journal of Production Research*, 30(1):63–87, 1992.
- [2209] R. Tanabe, H. Ishibuchi, and A. Oyama. **Benchmarking Multi- and Many-Objective Evolutionary Algorithms Under Two Optimization Scenarios.** *IEEE Access*, 5: 19597–19619, 2017.
- [2210] 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.
- [2211] 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.
- [2212] 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.
- [2213] 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.
- [2214] 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.
- [2215] 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.

- [2216] 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.
- [2217] 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.
- [2218] 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.
- [2219] 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.
- [2220] 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.
- [2221] 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.
- [2222] 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.
- [2223] 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.
- [2224] J. B. Tenenbaum, V. D. Silva, and J. C. Langford. **A global geometric framework for nonlinear dimensionality reduction**. *Science*, 290(5500):2319–2323, 2000.
- [2225] 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.
- [2226] 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.
- [2227] 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.
- [2228] The Turing Way Community, B. Arnold, L. Bowler, S. Gibson, P. Herterich, R. Higman, A. Krystalli, A. Morley, M. O'Reilly, and K. Whitaker. *The Turing Way: A Handbook for Reproducible Data Science*. Zenodo, Mar. 2019. doi:10.5281/zenodo.3233986.  
*Annotation:* Available from <https://the-turing-way.netlify.app>. This work was supported by The UKRI Strategic Priorities Fund under the EPSRC Grant EP/T001569/1, particularly the "Tools, Practices

- and Systems" theme within that grant, and by The Alan Turing Institute under the EPSRC grant EP/N510129/1.
- [2229] 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.
  - [2230] 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.
  - [2231] 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.
  - [2232] 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.
  - [2233] 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.
  - [2234] 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.
  - [2235] 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.
  - [2236] 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.
  - [2237] 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.
  - [2238] 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.
  - [2239] H. Topaloglu, editor. *Theory Driven by Influential Applications*. INFORMS Journal on Computing, 2013.
  - [2240] 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.
  - [2241] 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.

- [2242] 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.
- [2243] H. Trautmann and J. Mehnen. **Preference-based Pareto optimization in certain and noisy environments.** *Engineering Optimization*, 41(1):23–38, Jan. 2009.
- [2244] H. Trautmann, O. Mersmann, and D. Arnu. *cmaes: Covariance Matrix Adapting Evolutionary Strategy*, 2011. URL <http://cran.r-project.org/package=cmaes>. R package.
- [2245] 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.
- [2246] 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.
- [2247] 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>.
- [2248] 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.
- [2249] 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.
- [2250] 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.
- [2251] 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.
- [2252] 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.
- [2253] 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.  
*Keywords:* ant colony optimization, traveling salesman problem, cunning ant, donor ant, local search.
- [2254] 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.
- [2255] 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.  
*Keywords:* scenario-based.

- [2256] 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. doi:[10.1109/TEVC.2014.2313407](https://doi.org/10.1109/TEVC.2014.2313407).  
*Keywords:* SafeMDP.
- [2257] M. Turchetta, F. Berkenkamp, and A. Krause. **Safe Exploration for Interactive Machine Learning**. 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 2887–2897, 2019.  
*Keywords:* Reinforcement Learning; Markov Decision Process; SafeML.
- [2258] 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.
- [2259] 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.
- [2260] T. Tušar and B. Filipič. **Visualizing 4D approximation sets of multiobjective optimizers with projections**. In N. Krasnogor and P. L. Lanzi, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2011*, pages 737–744, New York, NY, 2011. ACM Press.
- [2261] T. Tušar and B. Filipič. **Visualizing Exact and Approximated 3D Empirical Attainment Functions**. *Mathematical Problems in Engineering*, 2014, 2014. Article ID 569346, 18 pages.
- [2262] T. Tušar and B. Filipič. **Visualization of Pareto front approximations in evolutionary multiobjective optimization: A critical review and the projection 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).
- [2263] 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.
- [2264] A. Tversky. **Choice by elimination**. *Journal of Mathematical Psychology*, 9(4):341–367, 1972.
- [2265] A. Tversky and D. Kahneman. **Judgment under uncertainty: Heuristics and biases**. *Science*, 185(4157):1124–1131, 1974.
- [2266] A. Tversky and D. Kahneman. **Loss aversion in riskless choice: a reference-dependent model**. *The Quarterly Journal of Economics*, 106(4):1039–1061, 1991.
- [2267] 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](https://doi.org/10.1016/j.ins.2010.02.017).
- [2268] G. H. Tzeng and P. L. Yu, editors. *Proceedings of the 10th International Conference on Multiple Criteria Decision Making (MCDM’91)*. Springer Verlag, 1992.
- [2269] D. Ucinski, 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.



- [2270] 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](https://doi.org/10.1007/BFb0029723).
- [2271] 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.
- [2272] E. Ulungu, J. Teghem, P. H. Fortemps, and D. Tuyttens. **MOSA method: a tool for solving multiobjective combinatorial optimization problems**. *Journal of Multi-Criteria Decision Analysis*, 8(4):221–236, 1999.
- [2273] 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.
- [2274] 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.
- [2275] 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](https://doi.org/10.1016/j.ejor.2010.05.041).
- [2276] 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](https://doi.org/10.1016/S0305-0548(97)00093-2).
- [2277] 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](https://doi.org/10.1016/j.omega.2009.04.002).
- [2278] 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.
- [2279] 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).
- [2280] 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.
- [2281] 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.
- [2282] 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.
- [2283] 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).
- [2284] P. van Hentenryck. *The OPL optimization programming language*. MIT Press, Cambridge, MA, 1999.

- [2285] P. van Hentenryck, editor. *Principles and Practice of Constraint Programming, CP 2002*. Lecture Notes in Computer Science. Springer, Heidelberg, Germany, 2002.
- [2286] P. van Hentenryck and L. D. Michel. *Constraint-based Local Search*. MIT Press, Cambridge, MA, 2005.
- [2287] 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.
- [2288] P. J. M. van Laarhoven and E. H. L. Aarts. *Simulated Annealing: Theory and Applications*, volume 37. Springer, 1987.
- [2289] 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.
- [2290] 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.
- [2291] 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.
- [2292] 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.
- [2293] 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.
- [2294] 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.
- [2295] 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.
- [2296] 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.
- [2297] 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.
- [2298] F. J. Varela and P. Bourguine, editors. *Proceedings of the First European Conference on Artificial Life*, 1992. MIT PressCambridge, MA.
- [2299] 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.

- [2300] 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.
- [2301] 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>.
- [2302] 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.
- [2303] 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.
- [2304] 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.
- [2305] 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.
- [2306] 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.
- [2307] 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.
- [2308] 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.
- [2309] A. Viana et al., editors. *Proceedings of the EU/MEeting 2009: Debating the future: new areas of application and innovative approaches*, 2009.
- [2310] P. Viappiani, B. Faltings, and P. Pu. **Preference-based Search using Example-Critiquing with Suggestions**. *Journal of Artificial Intelligence Research*, 27:465–503, 2006.
- [2311] P. Viappiani, P. Pu, and B. Faltings. **Preference-based Search with Adaptive Recommendations**. *AI Communications*, 21(2):155–175, 2008.
- [2312] R. V. V. Vidal, editor. *Applied Simulated Annealing*. Springer, 1993.
- [2313] 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.
- [2314] 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.

- [2315] 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.
- [2316] 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.
- [2317] 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.
- [2318] C. von Lüken, 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.
- [2319] S. Voß and D. L. Woodruff, editors. *Optimization Software Class Libraries*. Kluwer Academic Publishers, Boston, MA, 2002.
- [2320] 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.
- [2321] 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.
- [2322] 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.
- [2323] 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.
- [2324] 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.
- [2325] 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](https://doi.org/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.
- [2326] 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.

- [2327] 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](https://doi.org/10.1007/3-540-45349-0_31).
- [2328] D. J. Walker, R. M. Everson, and J. E. Fieldsend. **Visualizing mutually nondominating solution sets in many-objective optimization.** *IEEE Transactions on Evolutionary Computation*, 17(2):165–184, 2012.
- [2329] 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.
- [2330] J. Wallenius. **Comparative Evaluation of Some Interactive Approaches to Multicriterion Optimization.** *Management Science*, 21(12):1387–1396, 1975.
- [2331] 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.
- [2332] J. P. Walser. *Integer Optimization by Local Search: A Domain-Independent Approach*, volume 1637 of *Lecture Notes in Computer Science*. Springer, Heidelberg, Germany, 1999.
- [2333] 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.
- [2334] 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.
- [2335] 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.
- [2336] 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](https://doi.org/10.1137/S1064827598337373).
- [2337] 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, 1st edition, 2003.
- [2338] C. Wang, C. Chu, and J.-M. Proth. **Heuristic Approaches for n/m/F/ $\Sigma$ Ci Scheduling Problems.** *European Journal of Operational Research*, 96(3):636–644, 1997. doi:[10.1016/0377-2217\(95\)00347-9](https://doi.org/10.1016/0377-2217(95)00347-9).
- [2339] 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.
- [2340] 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.



- [2341] Y. Wang, Z. Lü, F. Glover, and J.-K. Hao. **Path relinking for unconstrained binary quadratic programming.** *European Journal of Operational Research*, 223(3):595–604, 2012.
- [2342] 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.
- [2343] 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.
- [2344] 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.
- [2345] M. O. Ward. **Multivariate data glyphs: Principles and practice.** In *Handbook of Data Visualization*, pages 179–198. Springer, 2008.
- [2346] A. A. Watson and J. R. Kasprzyk. **Incorporating deeply uncertain factors into the many objective search process.** *Environmental Modelling & Software*, 89:159–171, 2017. *Keywords:* scenario-based.
- [2347] 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.
- [2348] 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.
- [2349] T. Wauters. **10 years of Eternity II—from \$2 million puzzle to challenging optimization problem.** In *International Workshop on Cutting, Packing and Related Topics*, Gent, Belgium, 2017. URL <https://lirias.kuleuven.be/1675982?limo=0>.
- [2350] 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.
- [2351] I. Wegener. **Simulated annealing beats metropolis in combinatorial optimization.** In L. Caires, G. F. Italiano, L. Monteiro, C. Palamidessi, and M. Yung, editors, *Proceedings of the 32nd International Colloquium on Automata, Languages and Programming, ICALP 2005*, volume 3580 of *Lecture Notes in Computer Science*, pages 589–601. Springer, Heidelberg, Germany, 2005.
- [2352] 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.
- [2353] E. J. Wegman. **Hyperdimensional data analysis using parallel coordinates.** *Journal of the American Statistical Association*, 85(411):664–675, 1990.
- [2354] P. Wegner. **Research paradigms in computer science.** In *ICSE’76: Proceedings of the 2nd international conference on Software engineering*, pages 322–330, Oct. 1976.
- [2355] B. L. Welch. **The significance of the difference between two means when the population variances are unequal.** *Biometrika*, 29(3/4):350–362, 1938.
- [2356] 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.

- [2357] 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.
- [2358] 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.
- [2359] D. Weyland. **A critical analysis of the harmony search algorithm: How not to solve Sudoku.** *Operations Research Perspectives*, 2:97–105, 2015.
- [2360] 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.
- [2361] L. While and L. Bradstreet. **Applying the WFG Algorithm to Calculate Incremental Hypervolumes.** In *Proceedings of the 2012 Congress on Evolutionary Computation (CEC 2012)*, pages 1–8, Piscataway, NJ, 2012. IEEE Press.
- [2362] L. While, L. Bradstreet, and L. Barone. **A Fast Way of Calculating Exact Hypervolumes.** *IEEE Transactions on Evolutionary Computation*, 16(1):86–95, 2012.
- [2363] D. R. White, A. Arcuri, and J. A. Clark. **Evolutionary Improvement of Programs.** *IEEE Transactions on Evolutionary Computation*, 15(4):515–538, 2011.
- [2364] T. White, B. Paturek, 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.
- [2365] D. Whitley, editor. *Proceedings of the Second Workshop on Foundations of Genetic Algorithms.* Morgan Kaufmann Publishers, 1993. ISBN 1-55860-263-1.
- [2366] D. Whitley, S. Rana, J. Dzubera, and K. E. Mathias. **Evaluating Evolutionary Algorithms.** *Artificial Intelligence*, 85:245–296, 1996.
- [2367] D. Whitley et al., editors. *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2000.* Morgan Kaufmann Publishers, San Francisco, CA, 2000.
- [2368] A. Wiegele. **Biq Mac Library – A collection of Max-Cut and quadratic 0-1 programming instances of medium size.** Technical report, Institut für Mathematik, Alpen-Adria-Universität Klagenfurt, 2007. URL <http://biqmac.aau.at/biqmaclib.pdf>.
- [2369] A. Wiegele. **Biq Mac Library – Binary Quadratic and Max Cut Library.** <http://biqmac.aau.at/biqmaclib.html>, 2007.
- [2370] 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.
- [2371] 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.

- [2372] R. J. Williams. **Simple Statistical Gradient-Following Algorithms for Connectionist Reinforcement Learning**. *Machine Learning*, 8(3):229–256, 1992.
- [2373] C. Witt. **Analysis of an Iterated Local Search Algorithm for Vertex Cover in Sparse Random Graphs**. *Theoretical Computer Science*, 425:117–125, 2012.
- [2374] 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.
- [2375] R. Wolfler 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.
- [2376] D. H. Wolpert and W. G. Macready. **No Free Lunch Theorems for Optimization**. *IEEE Transactions on Evolutionary Computation*, 1(1):67–82, 1997.
- [2377] 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.
- [2378] 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.
- [2379] 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>.
- [2380] 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.
- [2381] 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.
- [2382] 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.
- [2383] E. P. Xing and T. Jebara, editors. *Proceedings of the 31st International Conference on Machine Learning, ICML 2014, Beijing, China, 21-26 June 2014*, volume 32, 2014. URL <http://jmlr.org/proceedings/papers/v32/>.
- [2384] 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.
- [2385] 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.
- [2386] 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.
- [2387] 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.

- [2388] 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>.
- [2389] 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.
- [2390] 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.
- [2391] 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.
- [2392] 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.
- [2393] 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.
- [2394] X. Yao. *Evolutionary Computation: Theory and Applications*. World Scientific Singapore, River Edge, NJ, 1999. ISBN 9810223064.  
*Keywords:* Evolutionary programming (Computer science); Neural networks (Computer science); Evolutionary computation.
- [2395] 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.
- [2396] 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.
- [2397] 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.
- [2398] 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.
- [2399] 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.
- [2400] 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.
- [2401] 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.

- [2402] 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.
- [2403] 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.
- [2404] 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.
- [2405] 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.
- [2406] 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.
- [2407] 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. doi:10.1007/978-3-319-10762-2\_37.  
Keywords: CEGO, Bayesian optimization.
- [2408] M. Zaefferer, J. Stork, M. Friese, 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. doi:10.1145/2576768.2598282.  
Keywords: CEGO, Bayesian optimization.  
Annotation: Proposed CEGO algorithm.
- [2409] 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.
- [2410] 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.
- [2411] 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.
- [2412] Q. Zhang. MOEA/D homepage. <https://dces.essex.ac.uk/staff/zhang/webofmoead.htm>, 2007.
- [2413] 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.



- [2414] 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.
- [2415] 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.
- [2416] 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.
- [2417] 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.
- [2418] T. Zhang, M. Georgiopoulos, and G. C. Anagnostopoulos. **Multi-Objective Model Selection via Racing**. *IEEE Transactions on Cybernetics*, 46(8):1863–1876, 2016.
- [2419] L. Zhen and D.-F. Chang. **A bi-objective model for robust berth allocation scheduling**. *Computers and Industrial Engineering*, 63(1):262–273, 2012.
- [2420] A. Zhou, Q. Zhang, and Y. Jin. **Approximating the set of Pareto-optimal solutions in both the decision and objective spaces by an estimation of distribution algorithm**. *IEEE Transactions on Evolutionary Computation*, 13(5):1167–1189, 2009. doi:10.1109/TEVC.2009.2021467.  
*Keywords:* multi-modal, IGDX.
- [2421] S. Zilberstein. **Using Anytime Algorithms in Intelligent Systems**. *AI Magazine*, 17(3):73–83, 1996.  
*Keywords:* performance profiles.
- [2422] 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.
- [2423] S. Zionts and J. Wallenius. **An interactive multiple objective linear programming method for a class of underlying nonlinear utility functions**. *Management Science*, 29(5):519–529, 1983.
- [2424] E. Zitzler. *Evolutionary Algorithms for Multiobjective Optimization: Methods and Applications*. PhD thesis, ETH Zürich, Switzerland, 1999.
- [2425] 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.
- [2426] 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. doi:10.1007/BFb0056872.  
*Annotation:* Introduces hypervolume measure.

- [2427] 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/zit1999a.pdf>.
- [2428] 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.
- [2429] 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.
- [2430] 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.
- [2431] 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.
- [2432] 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. doi:10.1109/TEVC.2003.810758.  
*Annotation:* Proposed the combination of quality indicators.
- [2433] 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/>.
- [2434] 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. doi:10.1109/TEVC.2009.2016569.
- [2435] 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.
- [2436] 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.  
*Keywords:* Performance assessment; Preference articulation; refinement; Set Partitioning; Set-preference.  
*Annotation:* Proposed SPAM and explores combination of quality indicators.
- [2437] 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.

- [2438] 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.