

Bibliography

- Abd El-Wahed, W.F. (2008) Intelligent fuzzy multi-objective optimization: analysis and new research directions. In *Proceedings of the 12th WSEAS international conference on Computers (ICCOMP'08)*, 678–687, Heraklion, Greece.
- Balanis, C. A. (1989) *Advanced Engineering Electromagnetics*. John Wiley & Sons, New York.
- Balanis, C.A. (2005) *Antenna Theory: Analysis and Design*. 3rd Edition, John Wiley & Sons, New York.
- Ballester, E. and Romero, C. (1991) A theorem connecting utility function optimization and compromise programming. *Operations Research Letters*, 10(7), 421–427.
- Benayoun, R., de Montgolfier, J., Tergny, J. and Laritchev, O. (1971) Programming with multiple objective functions: Step method (STEM). *Mathematical Programming*, 1, 366–375.
- Carver, K. R. and Mink, J. W. (1981) Microstrip Antenna Technology. *IEEE Trans. Antennas Propagat.*, 29(1), 2–24.
- Censor, Y. (1977) Pareto optimality in multiobjective problems. *Applied Mathematics and Optimization*, 4(1), 41–59.
- Chankong, V. and Haimes, Y.Y. (1983) *Multiobjective Decision Making: Theory and Methodology*. Elsevier Science Publishing, New York.
- Charnes, A. and Cooper, W.W. (1977) Goal programming and multiple objective optimization; part 1. *European Journal of Operational Research*, 1(1), 39–54.
- Chen, J. and Lin, S. (2003) An interactive neural network-based approach for solving multiple criteria decision-making problems. *Journal of Decision Support Systems*, 36, 137–146.
- Chen, J. and Lin, S. (2004) A neural network approach–decision neural network (DNN) for preference assessment. *IEEE Transactions on Systems, Man, and Cybernetics*, 34(2), 219–225.

- Chen, W., Sahai, A., Messac, A. and Sundararaj, G.J. (2000) Exploration of the effectiveness of physical programming in robust design. *Transactions of the ASME. Journal of Mechanical Design*, 122, 155–163.
- Coello, C.A. (1999) A comprehensive survey of evolutionary-based multiobjective optimization techniques. *Knowledge and Information Systems. An International Journal*, 1(3), 269–308.
- Coello, C.A., Veldhuizen, D.A.V. and Lamont, G.B. (2002) *Evolutionary Algorithms for Solving Multi-Objective Problems*. Kluwer Academic Publishers, New York.
- Das, I. and Dennis, J.E. (1997) 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.
- Deb, K. and Goldberg, D.E. (1989) An investigation of niche and species formation in genetic function optimization. In J. David Schaffer, editor, *Proceedings of the Third International Conference on Genetic Algorithms*, 42–50, San Mateo, California. George Mason University, Morgan Kaufmann Publishers.
- Deb, K. (1999) An introduction to genetic algorithms. *Sadhana*, 24(4), 293–315.
- Deb, K. (2001) *Multi-objective optimization using evolutionary algorithms*. Wiley, Chichester.
- Deb, K., Pratap, A., Agarwal, S. and Meyarivan, T. (2002) A fast and elitist multiobjective genetic algorithm: NSGA–II. *IEEE Transactions on Evolutionary Computation*, 6(2), 182–197.
- Deb, K., Tiwari, R., Dixit, M. and Dutta, J. (2007) Finding trade-off solutions close to KKT points using evolutionary multi-objective optimisation. In: *Proceedings of the Congress on Evolutionary Computation (CEC-2007)*, Singapore, 2109–2116.
- Engelbrecht, A.P. (2005) *Fundamentals of Computational Swarm Intelligence*. John Wiley & Sons.
- Engelbrecht, A.P. (2007) *Computational Intelligence: An Introduction*. John Wiley & Sons.
- Fieldsend, J.E. and Singh, S. (2002) A multiobjective algorithm based upon particle swarm optimisation, an efficient data structure and turbulence. In *Proceedings of the 2002 U.K. Workshop on Computational Intelligence*, 37–44, Birmingham, UK.

- Fishburn, P.C. (1974) Lexicographic orders, utilities and decision rules: A survey. *Management Science*, 20(11), 1442–1471.
- Gardiner, L.R. and Steuer, R.E. (1994) Unified interactive multiple objective programming. *European Journal of Operational Research*, 74(3), 391–406.
- Garg, R., Bahl, I.J., Bhartia, P. and Ittipiboon, A. (2000) *Microstrip antenna Design Hand Book*. Artech House, Dedham, MA.
- Gaspar-Cunha, A. and Vieira, A. (2005) A Multi-Objective Evolutionary Algorithm Using Neural Networks to Approximate Fitness Evaluations. *International Journal of Computers, Systems and Signals*, 6(1).
- Geoffrion, A.M., Dyer, J.S. and Feinberg, A. (1972) An interactive approach for multi-criterion optimization, with an application to the operation of an academic department. *Management Science*, 19, 357–368.
- Goldberg, D.E. (1989) *Genetic Algorithms for Search, Optimization, and Machine Learning*. Addison-Wesley, Reading.
- Hammerstad, E. O. (1975) Equations for Microstrip Circuit Design. *Proc. Fifth European Microwave Conf.*, 268–272.
- Haykin, S. (1994) *Neural Networks: A Comprehensive Foundation*. Macmillan, New York.
- Hu, X. and Eberhart, R. (2002) Multiobjective optimization using dynamic neighborhood particle swarm optimization. In *Congress on Evolutionary Computation (CEC'2002)*, volume 2, 1677–1681, Piscataway, New Jersey. IEEE Service Center.
- Huang, H.Z., Tian, Z. and Zuo, M.J. (2005) Intelligent interactive multiobjective optimization method and its application to reliability optimization. *IIE Transactions*, 37, 983–993.
- Ignizio, J.P. (1985) *Introduction to Linear Goal Programming*. Sage Publications, Beverly Hills.
- Isermann, H. and Steuer, R.E. (1988) Computational experience concerning payoff tables and minimum criterion values over the efficient set. *European Journal of Operational Research*, 33(1), 91–97.
- Jones, D.F., Tamiz, M. and Mirrazavi, S.K. (1998) Intelligent solution and analysis of goal programmes: the GPSYS system. *Decision Support Systems*, 23(4), 329–332.

- Jones, M.T. (2003) *AI Application Programming*. Charles River Media, Inc., Hingham, Massachusetts.
- Kaliszewski, I. (1994) *Quantitative Pareto Analysis by Cone Separation Technique*. Kluwer, Dordrecht.
- Keeney, R.L. and Raiffa, H. (1976) *Decisions with Multiple Objectives: references and Value Tradeoffs*. Wiley, Chichester.
- Keeney, R.L. and Raiffa, H. (1993) *Decisions with Multiple Objectives*. Cambridge, U.K. Cambridge Univ. Press.
- Kennedy, J. and Eberhart, R.C. (1995) Particle swarm optimization. In *Proceedings of the 1995 IEEE International Conference on Neural Networks*, 1942–1948, Piscataway, New Jersey. IEEE Service Center.
- Kennedy, J. and Eberhart, R.C. (2001) *Swarm Intelligence*. Morgan Kaufmann Publishers, San Francisco, California.
- Klamroth, K. and Miettinen, K. (2008) Integrating approximation and interactive decision making in multicriteria optimization. *Operations Research*, 56, 222–234.
- Kobayashi, K., Miki, M. and Hiroyasu, T. (2007) Mechanism of multi-objective genetic algorithm for maintaining the solution diversity using neural network. In *Lecture Notes in Computer Science*, Vol. 4403, 216–226. IEEE.
- Korhonen, P. and Laakso, J. (1986) A visual interactive method for solving the multiple criteria problem. *European Journal of Operational Research*, 24, 277–287.
- Korhonen, P., Salo, S. and Steuer, R.E. (1997) A heuristic for estimating nadir criterion values in multiple objective linear programming. *Operations Research*, 45(6), 751–757.
- Kuhn, H.W. and Tucker, A.W. (1951) Nonlinear programming. In J. Neyman, editor, *Proceedings of the Second Berkeley Symposium on Mathematical Statistics and Probability*, 481–492, Berkeley, California. University of California Press.
- Kung, H.T., Luccio, F. and Preparata, F.P. (1975) On finding the maxima of a set of vectors. *Journal of the Association for Computing Machinery*, 22(4), 469–476.

- Laumanns, M., Thiele, L., Deb, K. and Zitzler, E. (2002) Combining convergence and diversity in evolutionary multi-objective optimization. *Evolutionary Computation*, 10(3), 263–282.
- Lotov, A.V., Bushenkov, V.A. and Kamenev, G.K. (2004) *Interactive Decision Maps. Approximation and Visualization of Pareto Frontier*. Kluwer Academic Publishers, Boston.
- Lu, Q.Z., Sheng, Z.H. and Xu, N.R. (1995) A multiobjective decision-making algorithm based on BP-Hopfield neural networks. *Journal of Decision Making and Decision Support Systems*, 5, 93–103.
- Mahfouf, M., Chen, M.Y. and Linkens, D.A. (2004) Adaptive weighted particle swarm optimization for multi-objective optimal design of alloy steels. In *Parallel Problem Solving from Nature - PPSN VIII*, 762–771, Birmingham, UK. Springer-Verlag. Lecture Notes in Computer Science Vol. 3242.
- Malakooti, B. and Raman, V. (2000) Clustering and selection of multiple criteria alternatives using unsupervised and supervised neural networks. *Journal of Intelligent Manufacturing*, 11, 435–451.
- Miettinen, K. and Mäkelä, M.M. (1995) Interactive bundle-based method for nondifferentiable multiobjective optimization: NIMBUS. *Optimization*, 34, 231–246.
- Miettinen, K. (1999) *Nonlinear Multiobjective Optimization*. Kluwer Academic Publishers, Boston.
- Miettinen, K. and Mäkelä, M.M. (2000) Interactive multiobjective optimization system WWW-NIMBUS on the Internet. *Computers & Operations Research*, 27, 709–723.
- Miettinen, K. and Kirilov, L. (2005) Interactive reference direction approach using implicit parametrization for nonlinear multiobjective optimization. *Journal of Multi-Criteria Decision Analysis*, 13, 115–123.
- Moore, J. and Chapman, R. (1999) Application of particle swarm to multiobjective optimization. Department of Computer Science and Software Engineering, Auburn University.
- Mostaghim, S. and Teich, J. (2003a). Strategies for finding good local guides in multi-objective particle swarm optimization (MOPSO). In *Proceedings of the 2003 IEEE*

- Swarm Intelligence Symposium*, 26–33, Indianapolis, Indiana, USA. IEEE Service Center.
- Mostaghim, S. and Teich, J. (2003b) The role of ε -dominance in multi-objective particle swarm optimization methods. In *Congress on Evolutionary Computation (CEC'2003)*, volume 3, 1764–1771, Canberra, Australia. IEEE Press.
- Mostaghim, S. and Teich, J. (2004). Covering Pareto-optimal fronts by subswarms in multi-objective particle swarm optimization. In *Congress on Evolutionary Computation (CEC'2004)*, volume 2, 1404–1411, Portland, Oregon, USA. IEEE Service Center.
- Nakayama, H. (1995) Aspiration level approach to interactive multi-objective programming and its applications. In: Pardalos, P.M., Siskos, Y., Zopounidis, C. (eds.) *Advances in Multicriteria Analysis*, 147–174. Kluwer Academic Publishers, Dordrecht.
- Parsopoulos, K.E. and Vrahatis, M.N. (2002) Particle swarm optimization method in multiobjective problems. In *Proceedings of the 2002 ACM Symposium on Applied Computing (SAC'2002)*, 603–607, Madrid, Spain. ACM Press.
- Parsopoulos, K.E., Tasoulis, D.K. and Vrahatis, M.N. (2004) Multiobjective optimization using parallel vector evaluated particle swarm optimization. In *Proceedings of the IASTED International Conference on Artificial Intelligence and Applications (AIA 2004)*, volume 2, 823–828, Innsbruck, Austria. ACTA Press.
- Pozar, D. M. (1992) Microstrip Antennas. *Proc. IEEE*, 80(1), 79–81.
- Pulido, G.T. and Coello, C.A. (2004) Using clustering techniques to improve the performance of a particle swarm optimizer. In Kalyanmoy Deb et al., editor, *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO'2004)*, 225–237, Seattle, Washington, USA. Springer-Verlag, Lecture Notes in Computer Science Vol. 3102.
- Pulido, G.T. (2005) *On the Use of Self-Adaptation and Elitism for Multiobjective Particle Swarm Optimization*. PhD thesis, Computer Science Section, Department of Electrical Engineering, CINVESTAV-IPN, Mexico.
- Roy, B. and Mousseau, V. (1996) A theoretical framework for analysing the notion of relative importance of criteria. *Journal of Multi-Criteria Decision Analysis*, 5(2), 145–159.

- Rudolph, G. (1998) On a multi-objective evolutionary algorithm and its convergence to the Pareto set. In *Proceedings of the 5th IEEE Conference on Evolutionary Computation*, 511–516, Piscataway, New Jersey. IEEE Press.
- Sakawa, M. (1982) Interactive multiobjective decision making by the sequential proxy optimization technique. *European Journal of Operational Research*, 9, 386–396.
- Schaffer, J.D. (1985) Multiple objective optimization with vector evaluated genetic algorithms. In *Genetic Algorithms and their Applications: Proceedings of the First International Conference on Genetic Algorithms*, 93–100. Lawrence Erlbaum.
- Schaubert, D. H., Pozar, D. M. and Adrian, A. (1989) Effect of Microstrip Antenna Substrate Thickness and Permittivity: Comparison of Theories and Experiment. *IEEE Trans. Antennas Propagat.*, 37(6), 677–682.
- Schutte, J.F. (2001) *Particle Swarms in Sizing and Global optimization*. M.SC. thesis, department of Mechanical and Aeronautical Engineering, University of Pretoria.
- Shi, Y. and Eberhart, R.C. (1998) Parameter selection in particle swarm optimization. In *Evolutionary Programming VII: Proceedings of the Seventh annual Conference on Evolutionary Programming*, 591–600, New York, USA. Springer-Verlag.
- Shi, Y. and Eberhart, R.C. (1999) Empirical study of particle swarm optimization. In *Congress on Evolutionary Computation (CEC'1999)*, 1945–1950, Piscataway, NJ. IEEE Press.
- Sierra, M.R. and Coello, C.A. (2006) Multi-objective Particle swarm optimizers: A Survey of the State- of-Art. *International Journal of Computational Intelligence Research*, 2(3), 287–308.
- Stacey, A., Jancic, M. and Grundy, I. (2003) Particle swarm optimization with mutation. In *Proceedings of the Congress on Evolutionary Computation*, 1425–1430, Camberra, Australia. IEEE Press.
- Stam, A., Sun, M.H. and Haines, M. (1996) Artificial neural network representations for hierarchical preference structures. *Computers & Operations Research*, 23(12), 1191–1201.

- Stephens, D.P. (1992) *An Investigation of An Artificial Neural Network Approach to Multiple Criteria Ranking of Alternatives*. PhD thesis, Department of Industrial Engineering, The Wichita State University.
- Steuer, R.E. and Choo, E.U. (1983) An interactive weighted Tchebycheff procedure for multiple objective programming. *Mathematical Programming*, 26(1), 326–344.
- Steuer, R. E. (1986) *Multiple Criteria Optimization: Theory, Computation, and Application*, Wiley, New York.
- Steuer, R.E., Silverman, J. and Whisman, A.W. (1993) A combined Tchebycheff/aspiration criterion vector interactive multiobjective programming procedure. *Management Science*, 39, 1255–1260.
- Steuer, R. E., Luque, M. and Ruiz, F. (2010) Modified interactive Chebyshev algorithm (MICA) for convex multiobjective programming. *European Journal of Operational Research*, 204 (3), 557-564.
- Sun, M.H., Stam, A. and Steuer, R.E. (1996) Solving multiple objective programming problems using feed-forward artificial neural networks: the interactive FFANN procedure. *Management Science*, 42(6), 835–849.
- Sun, M.H., Stam, A. and Steuer, R.E. (2000) Interactive multiple objective programming using Tchebycheff programs and artificial neural networks. *Computers & Operations Research*, 27(7 and 8), 601–620.
- Wierzbicki, A.P. (1986) On the completeness and constructiveness of parametric characterizations to vector optimization problems. *OR Spectrum*, 8(2), 73–87.
- Wierzbicki, A.P. (1999) Reference point approaches. In: Gal, T., Stewart, T.J., Hanne, T. (eds.) *Multicriteria Decision Making: Advances in MCDM Models, Algorithms, Theory, and Applications*, 9-1–9-39. Kluwer, Boston.
- Wierzbicki, A.P., Makowski, M. and Wessels, J. (eds.) (2000) *Decision Support Methodology with Environmental Applications*. Kluwer Academic Publishers, Dordrecht.
- Yang, J.B. (1999) Gradient projection and local region search for multiobjective optimisation. *European Journal of Operational Research*, 112, 432–459.
- Yu, P.L. (1985) *Multiple-criteria decision making: concepts, techniques, and extensions*. Plenum Press, New York.

- Zadeh, L. (1963) Optimality and non-scalar-valued performance criteria. *IEEE Transactions on Automatic Control*, 8, 59–60.
- Zeleny, M. (1973) Compromise programming. In: Cochrane, J.L., Zeleny, M. (eds.) *Multiple Criteria Decision Making*, 262–301. University of South Carolina, Columbia, SC.
- Zionts, S. and Wallenius, J. (1976) An interactive programming method for solving the multiple criteria problem. *Management Science*, 22, 652–663.
- Zitzler, E., Deb, K. and Thiele, L. (2000) Comparison of multiobjective evolutionary algorithms: empirical results. *Evolutionary Computation*, 8(2), 173–195.