

# Bibliography: Packing

Vladimir Gantovnik\*, and Santosh Tiwari†  
*Clemson University*

January 25, 2006

## References

- [1] M. Adomowicz and A. Albano. Nesting two-dimensional shapes in rectangular modules. *Computer Aided Design*, 8:27–33, 1976.
- [2] U. Aickelin and K. A. Dowsland. An indirect genetic algorithm for a nurse scheduling problem. *Computers and Operations Research*, 31:761–778, 2004.
- [3] P. Andras, A. Andras, and S. Zsuzsa. A genetic solution for the cutting stock problem. In *Proceedings of the First On-line Workshop on Soft Computing*, pages 87–92, Berlin, 1996. Springer.
- [4] A. Autere. GA and 3D bin packing. In *Proceedings of the First Finnish Workshop on Genetic Algorithms and their Applications*, Helsinki University of Technology, Finland, November 1992.
- [5] B. S. Baker, E. G. Coffman, and R. L. Rivest. Orthogonal packing in two dimensions. *SIAM Journal of Computing*, 9:846–855, 1980.
- [6] J. E. Beasley. An exact two-dimensional non-guillotine cutting tree search procedure. *Operations Research*, 1:49–64, 1985.

---

\*Research Associate, CREDO Laboratory, Department of Mechanical Engineering, Clemson University, Clemson, SC 29634-0921, vbg1975@clemson.edu

†Graduate Student, CREDO Laboratory, Department of Mechanical Engineering, Clemson University, Clemson, SC 29634-0921, stiwari@clemson.edu

- [7] G. Belov. *Problems, models and algorithms in one- and two-dimensional cutting*. PhD thesis, Technischen Universitat Dresden, 2003.
- [8] J. O. Berkey and P. Y. Wang. Two-dimensional finite bin packing algorithms. *Journal of the Operational Research Society*, 38:423–429, 1987.
- [9] E. E. Bischoff. Three-dimensional packing of items with limited load bearing strength. *European Journal of Operational Research*, 168:952–966, 2006.
- [10] E. E. Bischoff and M. S. W. Ratcliff. Issues in the development of approaches to container loading. *Omega*, 23:377–390, 1995.
- [11] A. Bortfeldt. A genetic algorithm for the container loading problem. In Rayward-Smith, editor, *Proceedings of the Unicom Seminar on Adaptive Computing and Information Processing*, pages 749–757, 1994.
- [12] A. Bortfeldt. A genetic algorithm for the container loading problem. In *Proceedings of the Conference on Adaptive Computing and Information Processing*, volume 2, pages 25–32, London, 1994.
- [13] A. Bortfeldt and H. Gehring. A hybrid genetic algorithm for the container loading problem. *European Journal of Operational Research*, 131:143–161, 2001.
- [14] J. Cagan, K. Shimada, and S. Yin. A survey of computational approaches to three-dimensional layout problems. *Computer Aided Design*, 34(8):597–611, 2002.
- [15] A. Caprara and M. Monaci. On the two-dimensional knapsack problem. *Operations Research Letters*, 32:5–14, 2004.
- [16] P. Chen, Z. Fu, A. Lim, and B. Rodrigues. Two-dimensional packing for irregular shaped objects. In *Proceedings of the 36th Hawaii International Conference on System Sciences*, 2003.
- [17] N. Christfides and C. Whitlock. An algorithm for two-dimensional cutting problems. *Operations Research*, 25:30–44, 1977.
- [18] E. G. Coffman, M. R. Garey, and D. S. Johnson. Approximation algorithms for bin-packing - an updated survey. In *Algorithm Design for Computer System Design*, pages 49–106. Springer-Verlag, Vienna, 1984.

- [19] E. G. Coffman and P. W. Shor. Average-case analysis of cutting and packing in two dimensions. *European Journal of Operational Research*, 44:134–144, 1990.
- [20] A. L. Corcoran and R. L. Wainwright. A genetic algorithm for packing in three dimensions. In *Proceedings of the 1992 ACM/SIGAPP Symposium on Applied Computing (SAC92)*, pages 1021–1030, Kansas City, March 1992.
- [21] A. L. Corcoran and R. L. Wainwright. A genetic algorithm for packing in three dimensions. In *Applied computing technological challenges of the 1990s*, volume 2. ACM Press, New York, 1992.
- [22] C. H. Dagli and P. Poshyanonda. New approaches to nesting rectangular patterns. *Journal of Intelligent Manufacturing*, 8:177–190, 1997.
- [23] L. Davis. Applying adaptive search algorithms to epistatic domains. In *Proceedings of the 9th International Joint Conference on Artificial Intelligence*, pages 162–164, Los Angeles, 1985.
- [24] K. A. Dowsland. Some experiments with simulated annealing techniques for packing problems. *European Journal of Operational Research*, 68:389–399, 1993.
- [25] K. A. Dowsland and W. B. Dowsland. Packing problems. *European Journal of Operational Research*, 56:2–14, 1992.
- [26] K. A. Dowsland, E. A. Herbert, G. Kendall, and E. Burke. Using tree search bounds to enhance a genetic algorithm approach to two rectangle packing problems. *European Journal of Operational Research*, 168:390–402, 2006.
- [27] W. B. Dowsland. Three-dimensional packing - solution approaches and heuristic development. *Int J. Prod. Res*, 29(8):1673–1685, 1991.
- [28] H. Dyckhoff. A typology of cutting and packing problems. *European Journal of Operational Research*, 44(2):145–159, 1990.
- [29] G. M. Fadel and A. Sinha. Packing optimization using a rubber band analogy. In *Proceedings of ASME, DETC*, 2001.

- [30] E. Falkenauer. *Genetic Algorithm and Grouping Problems*. Wiley, New York, 1998.
- [31] O. Faroe and D. Zachariasen. Guided local search for the three-dimensional bin packing problem. *Inform Journal on Computing*, 15:267–283, 2003.
- [32] S. P. Fekete and J. Schepers. A combinatorial characterization of higher-dimensional orthogonal packing. *Mathematics of Operations Research*, 29:353–368, 2004.
- [33] E. Felkenauer and A. Delchambre. A genetic algorithm for bin-packing and line balancing. In *Proceedings of the 1992 IEEE International Conference on Robotics and Automation*, volume 2, pages 1186–1192, Nice, France, 1992.
- [34] H. Gehring and A. Bortfeldt. A genetic algorithm for solving the container loading problem. *International Transactions in Operational Research*, 4(4/5):401–418, 1997.
- [35] H. Gehring, K. Menschner, and M. Meyer. A computer-based heuristic for packing pooled shipment containers. *European Journal of Operational Research*, 44:277–288, 1990.
- [36] J. A. George, J. M. George, and B. W. Lamar. Packing different-sized circles into a rectangular container. *European Journal of Operational Research*, 84:693–712, 1995.
- [37] J. A. George and D. F. Robinson. A heuristic for packing boxes into a container. *Computers & Operational Research*, 7:147–156, 1980.
- [38] P. M. Grignon. *Configuration Design Optimization Method*. PhD thesis, Clemson University, May 1999.
- [39] R. W. Haessler and F. B. Talbot. Load planning for shipments of low density products. *European Journal of Operational Research*, 44:289–299, 1990.
- [40] R. W. Hassler and P. E. Sweeney. Cutting stock problems and solution procedures. *European Journal of Operational Research*, 54(2):141–150, 1991.

- [41] E. Hopper and B. C. H. Turton. Application of genetic algorithms to packing problems - a review. In *Proceedings of the Second On-line World Conference of Soft Computing in Engineering Design and Manufacturing*, pages 279–288, London, 1997. Springer.
- [42] E. Hopper and B. C. H. Turton. A genetic algorithm for a 2D industrial packing problem. *Computers and Industrial Engineering*, 37(1–2):375–378, 1999.
- [43] E. Hopper and B. C. H. Turton. An empirical investigation of meta-heuristic and heuristic algorithms for a 2D packing problem. *European Journal of Operational Research*, 128:34–57, 2001.
- [44] W. Hower, D. Köstner, and M. Rosendahl. Computer-aided layout by evolutionary computing. In *5th Eurographics Workshop on Programming Paradigms in Graphics*, Maastricht, The Netherlands, September 2–3 1995. EUROGRAPHICS, The European Association for Computer Graphics.
- [45] S. M. Hwang, Y. K. Cheng, and J. T. Horng. On solving rectangle bin packing problems using genetic algorithm. In *Proceedings of the 1994 IEEE International Conference on Systems, Man and Cybernetics*, pages 1583–1590, Piscataway, NJ, USA, 1994. IEEE.
- [46] I. Ikonen. *A genetic algorithm for a three-dimensional non-convex bin packing problem*. PhD thesis, University of Louisville, 1998.
- [47] I. Ikonen, W. E. Biles, A. Kumar, and R. K. Ragade. Concepts for a genetic algorithm for packing 3d objects of complex shape. In *Proceedings of the 1st Online Workshop on Soft Computing*, pages 211–215, Nagoya University, 1996.
- [48] I. Ikonen, W. E. Biles, A. Kumar, J. C. Wissel, and R. K. Ragade. A genetic algorithm for packing three-dimensional non-convex objects having cavities and holes. In *Proceedings of the 7th International Conference on Genetic Algorithms*, pages 591–598, Michigan State University, 1997.
- [49] N. Ivancic, K. Mathur, and B. Mohanty. An integer programming based heuristic approach to the three-dimensional packing problem. *Journal of Manufacturing and Operations Management*, 2:268–298, 1989.

- [50] S. Jackobs. On genetic algorithms for the packing of polygons. *European Journal of Operational Research*, 88:165–181, 1996.
- [51] T. Kampke. Simulated annealing: Use of a new tool in bin-packing. *Annals of Operational Research*, 16:327–332, 1988.
- [52] B. Kröger. Guillontineable bin-packing: A genetic approach. *European Journal of Operational Research*, 84:645–661, 1995.
- [53] B. Kroger, P. Schwenderling, and O. Vornberger. Genetic packing of rectangles on transputers. In *Transputing, part 2*, pages 593–608. IOS Press, Amsterdam, 1991.
- [54] B. Kroger, P. Schwenderling, and O. Vornberger. Parallel genetic packing of rectangles. In *Parallel Problem Solving from Nature 1st Workshop*, pages 160–164. Springer Verlag, 1991.
- [55] B. Kroger, P. Schwenderling, and O. Vornberger. Parallel genetic packing on transputers. In J. Stender, editor, *Parallel Genetic Algorithms: Theory and Applications*, pages 151–185. IOS Press, Amsterdam, 1993.
- [56] K. K. Lai and W. M. Chan. An evolutionary algorithm for the rectangular cutting stock problem. *International Journal of Industrial Engineering*, 4:130–139, 1997.
- [57] M. D. Landon and R. J. Balling. Optimal packing of complex parametric solids according to mass property criteria. *Journal of Mechanical Design*, pages 375–381, 1994.
- [58] J. Leung, T. Tam, C. S. Wong, G. Young, and F. Chin. Packing squares into square. *Journal of Parallel and Distributed Computing*, 10:271–275, 1990.
- [59] J. E. Lewis. *Strategies of distributed genetic algorithms for three-dimensional bin-packing in a SLS machine*. PhD thesis, University of Louisville, 2003.
- [60] J. E. Lewis, R. K. Ragade, A. Kumar, and W. E. Biles. A distributed chromosome genetic algorithm for bin-packing. *Robotics and Computer-Integrated Manufacturing*, 21:486–495, 2005.

- [61] J. L. Lin, B. Foote, S. Pulat, C. H. Chang, and J. Y. Cheung. Hybrid genetic algorithm for container packing in three dimensions. In *Proceedings of the 9th IEEE Conference on Artificial Intelligence*, pages 353–359, Washington, DC, 1993. IEEE Computer Society Press.
- [62] D. Liu and H. Teng. An improved BL-algorithm for genetic algorithm of the orthogonal packing of rectangles. *European Journal of Operational Research*, 112:413–419, 1999.
- [63] A. Lodi, S. Martello, and M. Monaci. Two-dimensional packing problems: a survey. *European Journal of Operational Research*, 141:241–252, 2002.
- [64] A. Lodi, S. Martello, and D. Vigo. Heuristic and metaheuristic approaches for a class of two-dimensional bin packing problems. *INFORMS Journal of Computing*, 11(4):345–357, 1999.
- [65] T. H. Loh and A. Y. C. Nee. A packing algorithm for hexahedral boxes. In *Proceedings of the Conference of Industrial Automation*, pages 115–126, Singapore, 1992.
- [66] S. Martello, M. Monaci, and D. Vigo. An exact approach to the strip-packing problem. *Inform Journal on Computing*, 15:310–319, 2003.
- [67] S. Martello, D. Pisinger, and D. Vigo. The three-dimensional bin packing problem. *Operations Research*, 48:256–267, 1998.
- [68] S. Martello and D. Vigo. Exact solution of the twodimensional finite bin packing problem. *Management Science*, 44:388–399, 1998.
- [69] M. Monaci. *Algorithms for Packing and Scheduling Problems*. PhD thesis, Universita degli studi di Bologna, 2003.
- [70] R. Morabito and M. Arenales. An AND/OR-graph approach to the container loading problem. *International Transactions in Operational Research*, 1(1):59–73, 1994.
- [71] B. K. A. Ngoi, M. L. Tay, and E. S. Chua. Applying spatial representation techniques to the container packing problem. *International Journal of Production Research*, 32:111–123, 1994.

- [72] D. Pisinger. Heuristics for the container loading problem. *European Journal of Operational Research*, 141:382–392, 2002.
- [73] M. C. Portmann. An efficient algorithm for container loading. *Methods of Operations Research*, 64:563–572, 1990.
- [74] P. Prosser. A hybrid genetic algorithm for container loading. In *Proceedings of the 8th European Conference on Artificial Intelligence*, pages 159–164, Pitman, London, November 1988.
- [75] G. Scheithauer. Algorithms for the container loading problem. *Operational Research Proceedings*, pages 445–452, 1991.
- [76] V. Schnecke. *Hybrid genetic algorithms for solving constrained packing and placement problems*. PhD thesis, Fachbereich Mathematik and Informatik, Universität Osnabrück, 1996.
- [77] D. Smith. Bin-packing with adaptive search. In J. J. Grefenstette, editor, *Proceedings of an International Conference on Genetic Algorithms and their Applications*, pages 202–206, London, 1985. Lawrence Erlbaum Ass.
- [78] N. Smith, W. Hills, and G. Cleland. A layout design system for complex made-to-order products. *Journal of Engineering Design*, 7(4):363–375, 1996.
- [79] S. Szykman and J. Cagan. A simulated annealing-based approach to three dimensional component packing. *Journal of Mechanical Design*, 117:308–314, 1995.
- [80] H. Teng, S. Sun, D. Liu, and Y. Li. Layout optimization for the objects located within a rotating vessel - a three-dimensional packing problem with behavioral constraints. *Computers & Operational Research*, 28:521–535, 2001.
- [81] J. R. Wodziak and G. M. Fadel. Packing and optimization the center of gravity location using a genetic algorithm. *Journal of Computers in Industry*, 1994.
- [82] J. R. Wodziak, G. M. Fadel, and C. Kirschman. A genetic algorithm for optimizing multiple part placement to reduce build time. In *Proceedings*



*of the 5th International Conference on Rapid Prototyping*, pages 201–210, Dayton, Ohio, June 1994.

- [83] S. Yin and J. Cagan. An extended pattern search algorithm for three dimensional component layout. *Journal of Mechanical Design*, 122:102–108, 2000.
- [84] D. Zhang, Y. Kang, and A. Deng. A new heuristic recursive algorithm for the strip rectangular packing problem. *Computers & Operations Research*, 33:2209–2217, 2006.