References

[1] Agarwal, P. K. and Sharir, M., *Davenport–Schinzel Sequences and Their Geometric Applications*, Duke University, Durham, NC, USA 1995

[2] Arkin, E. M. and Hassin, R. (2000), "Minimum-diameter covering problems", *Networks*, Vol. 36, No. 3, pp. 147–155 2000

[3] Arkin, E. M., Banik, A., Carmi, P., Citovsky, G., Katz, M. J., Mitchell, J. S. B., and Simakov, M. (2015), "Choice Is Hard", *in Algorithms and Computation - 26th International Symposium, ISAAC 2015, Nagoya, Japan, December 9-11, 2015, Proceedings*, pp. 318–328 2015

[4] Arkin, E. M., Banik, A., Carmi, P., Citovsky, G., Katz, M. J., Mitchell, J. S. B., and Simakov, M. (2015), "Conflict-free Covering", *in Proc. 27th Canadian Conf. on Comput. Geom., CCCG 2015* 2015

[5] Aronov, B., Har-Peled, S., Knauer, C., Wang, Y., and Wenk, C. (2006), "Fréchet Distance for Curves, Revisited", *in Algorithms - ESA 2006, 14th Annual European Symposium, Zurich, Switzerland, September 11-13, 2006, Proceedings*, pp. 52–63 2006

[6] Aronov, B., de Berg, M., Ezra, E., and Sharir, M. (2014), "Improved Bounds for the Union of Locally Fat Objects in the Plane", *SIAM J. Comput.*, Vol. 43, No. 2, pp. 543–572 2014

[7] Atallah, M. J. (1985), "Some dynamic computational geometry problems", *Computers and Mathematics with Applications*, Vol. 11, No. 12, pp. 1171 – 1181 1985

[8] Ausiello, G., *Complexity and approximation: combinatorial optimization problems and their approximability properties*, Springer 1999

[9] Ausiello, G., Crescenzi, P., and Protasi, M. (1995), "Approximate Solution of NP Optimization Problems", *Theor. Comput. Sci.*, Vol. 150, No. 1, pp. 1–55 1995

[10] Bodlaender, H. L., Downey, R. G., Fellows, M. R., and Hermelin, D. (2009), "On problems without polynomial kernels", *J. Comput. Syst. Sci.*, Vol. 75, No. 8, pp. 423–434 2009

[11] Bonnet, É. and Miltzow, T. (2016), "An Approximation Algorithm for the Art Gallery Problem", *CoRR*, Vol. abs/1607.05527 2016

[12] Brönnimann, H. and Goodrich, M. T. (1995), "Almost Optimal Set Covers in Finite VC-Dimension", *Discrete & Computational Geometry*, Vol. 14, No. 4, pp. 463–479 1995

[13] Brucker, P. (1978), "On the Complexity of Clustering Problems", in Optimization and Operations Research: Proceedings of a Workshop Held at the University of Bonn, October 2–8, 1977, edited by R. Henn, B. Korte, and W. Oettli, pp. 45–54, Springer Berlin Heidelberg, Berlin, Heidelberg 1978

[14] Chekuri, C. and Khanna, S. (2005), "A polynomial time approximation scheme for the multiple knapsack problem", *SIAM Journal on Computing*, Vol. 35, No. 3, pp. 713–728 2005

[15] Clarke, L. A. (1976), "A System to Generate Test Data and Symbolically Execute Programs", *IEEE Trans. Softw. Eng.*, Vol. 2, No. 3, pp. 215–222 May 1976

[16] Clarkson, K. L. and Varadarajan, K. R. (2007), "Improved Approximation Algorithms for Geometric Set Cover", *Discrete & Computational Geometry*, Vol. 37, No. 1, pp. 43–58 2007

[17] Consuegra, M. E. and Narasimhan, G. (2013), "Geometric Avatar Problems", *in IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science, FSTTCS 2013, December 12-14, 2013, Guwahati, India*, pp. 389–400 2013

[18] Cotta, C. and Troya, J. M. (1998), "A hybrid genetic algorithm for the 0-1 multiple knapsack problem", *in Proceedings of the International Conference on Artificial Neural Networks and Genetic Algorithms*, pp. 250–254 1998

[19] Crescenzi, P. (1997), "A short guide to approximation preserving reductions", *in Computational Complexity, 1997. Proceedings., Twelfth Annual IEEE Conference on (Formerly: Structure in Complexity Theory Conference)*, pp. 262–273, IEEE 1997

[20] Crescenzi, P. and Trevisan, L. (1994), "On approximation scheme preserving reductibility and its applications", *in International Conference on Foundations of Software Technology and Theoretical Computer Science*, pp. 330–341, Springer 1994
[21] Cygan, M., Fomin, F. V., Kowalik, L., Lokshtanov, D., Marx, D., Pilipczuk, M., Pilipczuk, M., and Saurabh, S., *Parameterized Algorithms*, Springer 2015
[22] Dawande, M., Kalagnanam, J., Keskinocak, P., Salman, F., and Ravi, R. (2000), "Approximation Algorithms for the Multiple Knapsack Problem with Assignment Restrictions", *Journal of Combinatorial Optimization*, Vol. 4, No. 2, pp. 171–186 Jun 2000
[23] Diestel, R., *Graph Theory, 4th Edition*, Vol. 173 of *Graduate texts in mathematics*, Springer 2012
[24] Downey, R. and Fellows, M., *Fundamentals of parameterized complexity*, Springer 2013
[25] Downey, R. G. and Fellows, M. R. (1995), "Fixed-Parameter Tractability and Completeness I: Basic Results", *SIAM J. Comput.*, Vol. 24, No. 4, pp. 873–921 Aug 1995
[26] Downey, R. G. and Fellows, M. R., *Fundamentals of Parameterized Complexity*, Springer Publishing Company, Incorporated, 1st edn. 2016
[27] Edmonds, J., *How to Think About Algorithms*, Cambridge University Press, New York, NY, USA 2008
[28] Eilon, S. and Christofides, N. (1971), "The Loading Problem", *Management Science*, Vol. 17, No. 5, pp. 259–268 1971, https://doi.org/10.1287/mnsc.17.5.259
[29] Eiter, T. and Mannila, H. (1994), *Computing discrete Fréchet distance*, *Tech. rep.*, Citeseer 1994
[30] Feige, U. (1998), "A threshold of ln n for approximating set cover", *Journal of the ACM (JACM)*, Vol. 45, No. 4, pp. 634–652 1998
[31] Flum, J. and Grohe, M., *Parameterized Complexity Theory*, Texts in Theoretical Computer Science. An EATCS Series, Springer-Verlag, Berlin 2006
[32] Foley, J. D., van Dam, A., Feiner, S. K., and Hughes, J. F., *Computer Graphics: Principles and Practice (2Nd Ed.)*, Addison-Wesley Longman Publishing Co., Inc., Boston, MA, USA 1990
[33] Fomin, F. V., Lokshtanov, D., Panolan, F., and Saurabh, S. (2016), "Efficient Computation of Representative Families with Applications in Parameterized and Exact Algorithms", *J. ACM*, Vol. 63, No. 4, p. 29 2016
[34] Fortnow, L. and Santhanam, R. (2008), "Infeasibility of instance compression and succinct PCPs for NP", *in STOC*, pp. 133–142 2008
[35] Fréville, A. (2004), "The multidimensional 0–1 knapsack problem: An overview", *European Journal of Operational Research*, Vol. 155, No. 1, pp. 1–21 2004
[36] Gabow, H. N. and Westermann, H. H. (1992), "Forests, Frames, and Games: Algorithms for Matroid Sums and Applications", *Algorithmica*, Vol. 7, No. 5&6, pp. 465–497 1992
[37] Gabow, H. N., Maheshwari, S. N., and Osterweil, L. J. (1976), "On two problems in the generation of program test paths", *IEEE Transactions on Software Engineering*, Vol. 2, No. 3, pp. 227–231 1976
[38] Ghasemi, T. and Razzazi, M. (2011), "Development of core to solve the multidimensional multiple-choice knapsack problem", *Computers & Industrial Engineering*, Vol. 60, No. 2, pp. 349–360 2011
[39] Gonzalez, T. F. (1985), "Clustering to minimize the maximum intercluster distance", *Theoretical Computer Science*, Vol. 38, No. Supplement C, pp. 293 – 306 1985
[40] Hall, P. (1935), "On Representatives of Subsets", *Journal of the London Mathematical Society*, Vol. s1-10, No. 1, pp. 26–30 1935
[41] Han, B., Leblet, J., and Simon, G. (2010), "Hard multidimensional multiple choice knapsack problems, an empirical study", *Computers & operations research*, Vol. 37, No. 1, pp. 172–181 2010
[42] Har-Peled, S. and Quanrud, K. (2015), "Approximation Algorithms for Low-Density Graphs", *CoRR*, Vol. abs/1501.00721 2015
[43] Har-Peled, S. and Quanrud, K. (2015), "Approximation Algorithms for Polynomial-Expansion and Low-Density Graphs", *in Algorithms - ESA 2015 - 23rd Annual European Symposium, Patras, Greece, September 14-16, 2015, Proceedings*, Vol. 9294, pp. 717–728, Springer 2015
[44] Hausdorff, F., *Grundzüge der Mengenlehre*, Veit and Company, Leipzig, das Hauptwerk von Felix Hausdorff. 1914

[45] Hershberger, J. (1989), "Finding the upper envelope of n line segments in O(n log n) time", *Information Processing Letters*, Vol. 33, No. 4, pp. 169 – 174 1989

[46] Hochbaum, D. S. and Pathria, A. (1997), "Generalized p-Center problems: Complexity results and approximation algorithms", *European Journal of Operational Research*, Vol. 100, No. 3, pp. 594 – 607 1997

[47] Hochbaum, D. S. and Shmoys, D. B. (1986), "A Unified Approach to Approximation Algorithms for Bottleneck Problems", *J. ACM*, Vol. 33, No. 3, pp. 533–550 May 1986

[48] Hoffmann, C. M., *Geometric and Solid Modeling: An Introduction*, Morgan Kaufmann Publishers Inc., San Francisco, CA, USA 1989

[49] Hudec, O. (1992), "On alternative p-center problems", *Zeitschrift fur Operations Research*, Vol. 36, No. 5, pp. 439–445 1992

[50] Jansen, K. and Zhang, G. (2004), "On rectangle packing: maximizing benefits", *in Proceedings of the fifteenth annual ACM-SIAM symposium on Discrete algorithms*, pp. 204–213, Society for Industrial and Applied Mathematics 2004

[51] Johnson, D. S. (1982), "The NP-completeness column: An ongoing guide", *Journal of Algorithms*, Vol. 3, No. 2, pp. 182 – 195 1982

[52] Kariv, O. and Hakimi, S. L. (1979), "An Algorithmic Approach to Network Location Problems. I: The p-Centers", *SIAM Journal on Applied Mathematics*, Vol. 37, No. 3, pp. 513–538 1979

[53] Karp, R. M. (1972), "Reducibility among Combinatorial Problems", in Complexity of Computer Computations: Proceedings of a symposium on the Complexity of Computer Computations, held March 20–22, 1972, at the IBM Thomas J. Watson Research Center, Yorktown Heights, New York, and sponsored by the Office of Naval Research, Mathematics Program, IBM World Trade Corporation, and the IBM Research Mathematical Sciences Department, edited by R. E. Miller, J. W. Thatcher, and J. D. Bohlinger, pp. 85–103, Springer US, Boston, MA 1972

[54] Khuri, S., Bäck, T., and Heitkötter, J. (1994), "The zero/one multiple knapsack problem and genetic algorithms", *in Proceedings of the 1994 ACM symposium on Applied computing*, pp. 188–193, ACM 1994

[55] King, J. C. (1975), "A New Approach to Program Testing", *SIGPLAN Not.*, Vol. 10, No. 6, pp. 228–233 Apr 1975

[56] Krause, K. A., Smith, R. W., and Goodwin, M. A. (1973), "Optimal software test planning through automated network analysis", *IEEE Symposium on Computer Software Reliability, IEEE Cat. #73C40741-9CSR*, pp. 18–22 1973

[57] Krohn, E., Gibson, M., Kanade, G., and Varadarajan, K. R. (2014), "Guarding Terrains via Local Search", *JoCG*, Vol. 5, No. 1, pp. 168–178 2014

[58] Lal, A., Akshay, S., Saurabh, S., and Sen, S. (Editors) (2016), *36th IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science, FSTTCS 2016, December 13-15, 2016, Chennai, India*, Vol. 65 of *LIPIcs*, Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik 2016

[59] Lokshtanov, D., Misra, P., Panolan, F., and Saurabh, S. (2015), "Deterministic Truncation of Linear Matroids", *in Automata, Languages, and Programming - 42nd International Colloquium, ICALP 2015, Proceedings, Part I*, Vol. 9134, pp. 922–934, Springer 2015

[60] Lokshtanov, D., Panolan, F., Ramanujan, M. S., and Saurabh, S. (2016), "Lossy Kernelization", *CoRR*, Vol. abs/1604.04111 2016

[61] Lokshtanov, D., Panolan, F., Saurabh, S., Sharma, R., and Zehavi, M. (2018), "Covering Small Independent Sets and Separators with Applications to Parameterized Algorithms", *in Proceedings of the Twenty-Ninth Annual ACM-SIAM Symposium on Discrete Algorithms, SODA 2018, New Orleans, LA, USA, January 7-10, 2018*, pp. 2785–2800 2018

[62] Martello, S. and Toth, P. (1981), "A Bound and Bound algorithm for the zero-one multiple knapsack problem", *Discrete Applied Mathematics*, Vol. 3, No. 4, pp. 275 – 288, special Copy 1981

[63] Martello, S. and Toth, P., *Knapsack Problems: Algorithms and Computer Implementations*, John Wiley & Sons, Inc., New York, NY, USA 1990

[64] Marx, D. (2005), "Efficient Approximation Schemes for Geometric Problems?", *in Algorithms - ESA*

2005, 13th Annual European Symposium, Palma de Mallorca, Spain, October 3-6, 2005, Proceedings, edited by G. S. Brodal and S. Leonardi, Vol. 3669 of *Lecture Notes in Computer Science*, pp. 448–459, Springer 2005

[65] Marx, D. (2009), "A parameterized view on matroid optimization problems", *Theor. Comput. Sci.*, Vol. 410, No. 44, pp. 4471–4479 2009

[66] Mortenson, M., *Geometric Modeling*, Industrial Press, New York, 3rd edn. 2006

[67] Moser, M., Jokanovic, D. P., and Shiratori, N. (1997), "An algorithm for the multidimensional multiple-choice knapsack problem", *IEICE transactions on fundamentals of electronics, communications and computer sciences*, Vol. 80, No. 3, pp. 582–589 1997

[68] Mustafa, N. H. and Ray, S. (2009), "PTAS for Geometric Hitting Set Problems via Local Search", *in Proceedings of the Twenty-fifth Annual Symposium on Computational Geometry*, SCG '09, pp. 17–22, ACM, New York, NY, USA 2009

[69] Mustafa, N. H., Raman, R., and Ray, S. (2014), "Settling the APX-Hardness Status for Geometric Set Cover", *in 55th IEEE Annual Symposium on Foundations of Computer Science, FOCS 2014*, pp. 541–550, IEEE Computer Society 2014

[70] Naor, M., Schulman, L. J., and Srinivasan, A. (1995), "Splitters and Near-Optimal Derandomization", *in 36th Annual Symposium on Foundations of Computer Science, Milwaukee, Wisconsin, 23-25 October 1995*, pp. 182–191 1995

[71] Osterweil, L. J. and Fosdick, L. D. (1974), "Data Flow Analysis as an Aid in Documentation, Assertion Generation, Validation and Error Detection", *Dept. of Computer Science, University of Colorado, Boulder, Colorado 80302, Rep. CU-CS-055-74* Sept 1974

[72] Oxley, J. G., *Matroid theory*, Vol. 3, Oxford University Press 2006

[73] Pisinger, D. (1999), "An exact algorithm for large multiple knapsack problems", *European Journal of Operational Research*, Vol. 114, No. 3, pp. 528 – 541 1999

[74] Samet, H., *Foundations of Multidimensional and Metric Data Structures (The Morgan Kaufmann Series in Computer Graphics and Geometric Modeling)*, Morgan Kaufmann Publishers Inc., San Francisco, CA, USA 2005

[75] Sbihi, A. (2007), "A best first search exact algorithm for the multiple-choice multidimensional knapsack problem", *Journal of Combinatorial Optimization*, Vol. 13, No. 4, pp. 337–351 2007

[76] Selig, J. M., *Geometric Fundamentals of Robotics (Monographs in Computer Science)*, SpringerVerlag 2004

[77] Shah-Hosseini, H. (2008), "Intelligent water drops algorithm: A new optimization method for solving the multiple knapsack problem", *International Journal of Intelligent Computing and Cybernetics*, Vol. 1, No. 2, pp. 193–212 2008

[78] Tanimoto, S. L., Itai, A., and Rodeh, M. (1978), "Some matching problems for bipartite graphs", *Journal of the ACM (JACM)*, Vol. 25, No. 4, pp. 517–525 1978

[79] Williams, V. V. (2012), "Multiplying matrices faster than Coppersmith-Winograd", pp. 887–898, ACM 2012