Book List for Algorithms and Data Structures Summer 2008

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1 General Books

[1] K. Mehlhorn and P. Sanders. *Algorithms and Data Structures: The Basic Toolbox*. Springer Verlag, 2008.

[2] J. Kleinberg and E. Tardos. *Algorithm Design*. Addison Wesley, 2005.

[3] R. Sedgewick. *Algorithms in C, C++, Java, Part 1 – 4 (Fundamental Algorithms, Data Structures, Sorting, Searching)*. Addison-Wesley, 200X.

[4] T. Ottmann and P. Widmayer. *Algorithmen und Datenstrukturen*. Spektrum Akademischer Verlag, 1996.

[5] A. V. Aho, J. E. Hopcroft, and J. D. Ullman. *Data Structures and Algorithms*. Addison-Wesley, 1983.

[6] D.C. Kozen. *The Design and Analysis of Algorithms*. Springer Verlag, 1992.

[7] G.J.E. Rawlins. *Compared to What? An Introduction to the Analysis of Algorithms*. W.H. Freeman, 1992.

[8] U. Manber. *Introduction to Algorithms*. Addison-Wesley, 1989.

[9] J. van Leeuwen, editor. *Handbook of Theoretical Computer Science: Volume A (Algorithms and Complexity)*. Elsevier, 1990.

[10] K. Mehlhorn. *Data Structures and Efficient Algorithms*, volume 1: Sorting and Searching. Springer, 1984. 336 pages.

[11] K. Mehlhorn. *Data Structures and Efficient Algorithms*, volume 2: Graph Algorithms and NP-Completeness. Springer, 1984. 260 pages.

[12] K. Mehlhorn. *Data Structures and Efficient Algorithms*, volume 3: Multi-dimensional Searching and Computational Geometry. Springer, 1984. 284 pages.

[13] D.E. Knuth. *The Art of Computer Programming (Volume I): Fundamental Algorithms*. Addison-Wesley, 1973.

[14] D.E. Knuth. *The Art of Computer Programming (Volume II): Seminumerical Algorithms*. Addison-Wesley, 1981.

[15] D.E. Knuth. *The Art of Computer Programming (Volume III): Sorting and Searching*. Addison-Wesley, 1981.

2 Implementations and Software Libraries

[1] K. Mehlhorn and S. Näher. *The LEDA Platform for Combinatorial and Geometric Computing*. Cambridge University Press, 1999.

[2] CGAL (Computational Geometry Algorithms Library). `www.cgal.org`.

[3] LEDA (Library of Efficient Data Types and Algorithms). `www.algorithmic-solutions.com`.

[4] CPLEX. `www.cplex.com`.

3 Graph Algorithms

[1] R. Sedgewick. *Algorithms in* `C++` *Part 5: Graph Algorithms*. Addison-Wesley, 2001.

[2] R.K. Ahuja, T.L. Magnanti, and J.B. Orlin. *Network Flows*. Prentice Hall, 1993.

[3] R. E. Tarjan. Data structures and network algorithms. In *CBMS-NSF Regional Conference Series in Applied Mathematics*, volume 44, 1983.

4 Algorithms on Strings

[1] W. Rytter and M. Crochemore. *Jewels of Stringology: Text Algorithms*. World Scientific, 2002.

[2] M. Crochemore and W. Rytter. *Text Algorithms*. Oxford University Press, 1994.

5 Approximation Algorithms

[1] K. Jansen and M. Margraf. *Approximative Algorithmen und Nichtapproximierbarkeit*. de Gruyter, 2008.

[2] V.V. Vazirani. *Approximation Algorithms*. Springer, 2000.

6 Integer and Combinatorial Optimization

[1] D. Bertsimas and R. Weismantel. *Optimization over Integers*. Dynamic Ideas, 2005.

[2] A. Schrijver. *Combinatorial Optimization (3 Volumes)*. Springer Verlag, 2003.

[3] W.J. Cook, W.H. Cunningham, W.R. Pulleyblank, and A. Schrijver. *Combinatorial Optimization*. John Wiley & Sons, Inc, 1998.

[4] B. Korte and J.Vygen. *Combinatorial Optimization: Theory and Algorithms*. Springer, 2000.

[5] G.L. Nemhauser and L.A. Wolsey. *Integer and Combinatorial Optimization*. Wiley, 1988.

7 Parallel and Distributed Algorithms

[1] J. JáJá. *An Introduction to Parallel Algorithms*. Addison-Wesley, 1992.

[2] T. Leighton and F. Thomson. *Introduction to Parallel Algorithms*. Addison Wesley, 1992.

[3] N. Lynch. *Distributed Algorithms*. Morgan Kaufmann, 1996.

8 Computational Geometry

[1] M. de Berg, M. van Kreveld, M. Overmars, and O. Schwarzkopf. *Computational Geometry: Algorithms and Applications*. Springer, 1997.

[2] R. Klein. *Algorithmische Geometrie*. Addison-Wesley, 1997.

[3] J.-D. Boissonnat and M. Yvinec. *Algorithmic Geometry*. Cambridge University Press, Cambridge, 1998.

9 Randomized Algorithms

[1] R. Motwani and P. Raghavan. *Randomized Algorithms*. Cambridge University Press, 1995.

10 Computer Algebra

[1] C.K. Yap. *Fundamental Problems in Algorithmic Algebra*. Oxford University Press, 1999.

[2] Joachim Von zur Gathen and Jürgen Gerhard. *Modern Computer Algebra*. Cambridge University Press, New York, NY, USA, 1999.

11 Analysis of Algorithms and Mathematical Foundations

[1] R. L. Graham, D. E. Knuth, and O. Patashnik. *Concrete Mathematics*. Addison-Wesley, 1994.

[2] R Sedgewick and P. Flajolet. *An Introduction to the Analysis of Algorithms*. Addison-Wesley, 1996.

Data Structures and Algorithms: Annotated Reference with Examples. First Edition. Copyright c Granville Barnett, and Luca Del Tongo 2008.Â The previous list represents what we believe in the vast majority of cases to be the most important for each respective data structure. For all readers we recommend that before looking at any algorithm you quickly look at Appendix E which contains a table listing the various symbols used within our algorithms and their meaning. One keyword that we would like to point out here is yield.Â The project is named Data Structures and Algorithms (DSA) and can be found at http://codeplex.com/dsa. 1.8 Final messages. We have just a few nal messages to the reader that we hope you digest before you embark on reading this book Data Structure 2008-09 - Free download as PDF File (.pdf), Text File (.txt) or view presentation slides online.Â Discover everything Scribd has to offer, including books and audiobooks from major publishers. Start Free Trial. Cancel anytime. Data Structure 2008-09. Uploaded by. Amit Kumar.Â List some linear and non-linear data structures stating the application area where they will be used. (ii) State the merits and demerits of static and dynamic memory allocation techniques. (b) (i) Define tail recursion by giving suitable example. (ii) How two dimensional arrays are represented in memory?