Technische Universität München
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Proseminar
Graph Drawing
Sommersemester 2004
10. Februar 2004

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Themenliste

1. Einführung: Wie zeichnet man einen Graphen?

   [1] P. Eades, P. Mutzel: Graph Drawing Algorithms. In Mikhail J. Atallah, editor, Algorithms and Theory of Computation Handbook, Chapter 9, CRC Press, Boca Raton, 1999.

   [2] G. Di Battista, P. Eades, R. Tamassia, I.G. Tollis: GraphDrawing. Upper Saddle River, NJ, Prentice Hall, pp. 1–18,1999.

   [3] I.F. Cruz, R. Tamassia: How to Visualize a Graph: Specifications and Algorithms. Tutorial, 1994.

   [4] R. Tamassia: Graph Drawing. In Eli Goodman and Joseph O'Rourke, editors, Handbook of Discrete and Computational Geometry, Chapter 44, CRC Press, Boca Raton, 1999.

2. Schöne Zeichnungen von Bäumen

   [5] C. Wetherell and A. Shannon: Tidy Drawing of Trees. IEEE Trans. on Software Engineering, Vol. SE-5(5), pp. 514–520, 1979.

   [6] E.M. Reingold, J.S. Tilford: Tidier Drawing of Trees. IEEE Trans. on Software Engineering, Vol. SE-7(2), pp. 223–228, 1981.

3. Zeichnungen von Binärbäumen mit optimaler Fläche

   [7] P. Crescenzi, G. Di Battista, A. Piperno: A Note on optimal area algorithms for upward drawings of binary trees. Computational Geometry: Theory and Applications, Vol. 2, pp. 187–200, 1992.

4. Zeichnen in mehreren Ebenen

   [8] K. Sugiyama, S. Tagawa, and M. Toda: Methods for Visual Understanding of Hierarchical System Structures. IEEE Trans. on Systems, Man, and Cybernetics, SMC-11(2), pp. 109–125, 1981.

5. Das Feder-Modell zum Zeichnen beliebiger Graphen

[9] T.M.J. Fruchterman, E.M. Reingold: Graph Drawing by Force-directed Placement. Software-Practice and Experience, Vol. 21(11), pp. 1129–1164, 1991.

6. Hierarchische Zeichnungen

[10] P. Eades, M.L. Huang: Navigating Clustered Graphs using Force-Directed Methods. Journal of Graph Algorithms and Applications, Vol. 4(3), pp. 157–181, 2000.

7. Testen eines Graphen auf Planarität

[11] A. Gibbons: Planar Graphs. In Algorithmic Graph Theory, Chapter 3, pp. 67–95. Press Synicate of the University of Cambridge, Cambridge, New York, Melbourne, 1985, Reprint 1991.

[12] R. Thomas: Planarity in Linear Time. Class notes. http://www.math.gatech.edu/ thomas/planatiry.ps.

8. Ein einfacher Algorithmus für das Zeichnen planarer Graphen

[13] R. Read: A new method for drawing a planar graph given the cyclic order of the edges at each vertex. Congressus Numerantium, Vol. 56, pp. 31–44, 1987.

9. Planarisierung von Graphen

[14] P. Eades, L. Foulds, J. Giffin: An Efficient Heuristic for Identifying a Maximal Weight Planar Subgraph. Combinatorial Mathematics IX, Lecture Notes in Mathematics, Vol. 952, pp. 239–251, 1982.

10. Färben von Landkarten (planare Graphen)

[15] Aigner, Martin Ziegler, Günter M.:Proofs from THE BOOK. Springer, Berlin, Chapter 25 1998.

[16] West, Douglas B.:Introduction to Graph Theory. PRENTICE HALL , Upper Saddle River, NJ, Chapter 7.1 and 7.3, 1996.

11. Minimierung von Kantenkreuzungen bei allgemeinen Graphen

[17] M. Scharbrodt: Die Kreuzungszahl von Graphen. Diplomarbeit Universität zu Köln, Chapter 11, 1994.

12. 3-D Zeichnungen von Graphen

[18] P. Eades, C. Stirk, S. Whitesides: The Techniques of Komolgorov and Bardzin for Three Dimensional Orthogonal Graph Drawing. Information Processing Letters, 60(2), pp. 97-103, 1996.

[19] Giuseppe Di Battista, Maurizio Patrignani, Francesco Vargiu: A Split&Push Approach to 3D Orthogonal Drawing. In Proceedings of the 6th International Symposium on Graph Drawing (GD '98), Ed. Whitesides, Berlin, Springer, pp. 87–101, 1998.