Technische Universität München
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Prof. Dr. A. Steger

Proseminar
Automatisiertes Zeichnen von Graphen
Wintersemester 1999/2000
29. Juli 1999

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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, CRC Press, Boca Raton, 1999.

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

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

2. Schöne Zeichnungen von Bäumen

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

   [5] 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

   [6] 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. Hierarchische Zeichnungen

   [7] 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

   [8] 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. Testen eines Graphen auf Planarität

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

7. Ein einfacher Algorithmus für das Zeichnen planarer Graphen

   [10] 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.

8. Planarisierung von Graphen

   [11] 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.

9. Minimierung von Kantenkreuzungen bei allgemeinen Graphen

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

   [7] 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.

10. Dreidimensionale Zeichnungen von Graphen

    [13] 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.

11. Graph Drawing in Action: Anwendungen und Tools

    [14] Tom Sawyer Software: http://www.tomsawyer.com

    [15] SNiFF: User's manual: http://www.takefive.com

    [16] MultiwayTreeTeX:
    http://wwwmayr.informatik.tu-muenchen.de/rechenbetrieb/MTTdoc.ps