Technische Universität München
Fakultät für Informatik
Lehrstuhl für Effiziente Algorithmen
Prof. Dr. E.W. Mayr, Prof. Dr. A. Steger

Proseminar
Algorithmen in der Bioinformatik
Sommersemester 2002
8. Februar 2002

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Themenliste

1. Basic Concepts of Molecular Biology

   [1] J. Setubal, J. Meidanis: Introduction to Computational Molecular Biology, PWS 1997; Kapitel 1.

   [2] P. Clote, R. Backofen: Computational Molecular Biology — An Introduction, Wiley 2000; Kapitel 1.

   [3] M. Waterman: Introduction to Computational Biology, Chapman & Hall, 1995; Kapitel 1.

2. String Matching: Knuth-Morris-Pratt

   [4] D. Gusfield: Algorithms on Strings, Trees, and Sequences – Computer Science and Computational Biology, Cambridge University Press, 1997; Kapitel 1-4.

   [5] V. Heun: Grundlegende Algorithmen, Vieweg-Verlag, 2000, Kapitel 6

   [6] I.Rohloff: Manuskript zu KMP- und BM-Alorithmus, TU München.

3. String Matching: Boyer-Moore

   [4] D. Gusfield: Algorithms on Strings, Trees, and Sequences – Computer Science and Computational Biology, Cambridge University Press, 1997; Kapitel 1-4.

   [5] V. Heun: Grundlegende Algorithmen, Vieweg-Verlag, 2000, Kapitel 6

   [6] I.Rohloff: Manuskript zu KMP- und BM-Alorithmus, TU München.

4. String Matching: Karp-Rabin

   [7] D. Gusfield: Algorithms on Strings, Trees, and Sequences – Computer Science and Computational Biology, Cambridge University Press, 1997; Kapitel 4.

5. Pairwise Sequence Alignment

   [8] J. Setubal, J. Meidanis: Introduction to Computational Molecular Biology, PWS 1997; Kapitel 3.1, 3.2, 3.3.

6. Multiple Sequence Alignment

[9] J. Setubal, J. Meidanis: Introduction to Computational Molecular Biology, PWS 1997; Kapitel 3.1, 3.4.

7. Biological Data Bases

[10] H.H. Rashidi, L.K. Bühler: Grundriss der Bioinformatik, Kapitel 2, Skektrum Akademischer Verlag, 2001.

[11] D.W. Mount: Bioinformatics - Sequence and Genome Analysis Kapitel 2, Cold Spring Harbor Laboratory Press, 2001.

[12] T.K. Attwood, D.J. Parry-Smith: Introduction to Bioinformatics, Kapitel 3,4, Prentice Hall, 1999.

[13] Eigene WWW-Recherche

8. Searching in Biological Data Bases

[14] J. Setubal, J. Meidanis: Introduction to Computational Molecular Biology, PWS 1997; Kapitel 3.1, 3.5.

[15] D. Gusfield: Algorithms on Strings, Trees, and Sequences – Computer Science and Computational Biology, Cambridge University Press, 1997; Kapitel 15.

[16] D.W. Mount: Bioinformatics - Sequence and Genome Analysis Kapitel 7, Cold Spring Harbor Laboratory Press, 2001.

9. Sequence Assembly

[17] J. Setubal, J. Meidanis: Introduction to Computational Molecular Biology, PWS 1997; Kapitel 4.1, 4.2, 4.3.

10. Evolutionary Trees: Reconstruction from Character Data

[18] J. Setubal, J. Meidanis: Introduction to Computational Molecular Biology, PWS 1997; Kapitel 6.1, 6.2, 6.3, 6.4.

11. Evolutionary Trees: Reconstruction from Distance Matrices

[19] J. Setubal, J. Meidanis: Introduction to Computational Molecular Biology, PWS 1997; Kapitel 6.5, 6.6.