Universität Bielefeld
Technische Fakultät

AG Genominformatik
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Lecture: Spezielle Algorithmen der Sequenzanalyse
Summer semester 2006

Exercises

Exercise 4, Discussion: 05/03/2006.

1. **Computing local alignments in linear space.**
   Describe an algorithm to compute the optimal local alignment in linear space.
   Hint: Use Hirschberg's algorithm as a subroutine.
2. **Computing suboptimal local alignments.**
   Given the two strings u=CCGTTCACG, v=TCCG and the score-function σ. Calculate the three best (suboptimal) local alignments with their related edit-matrices.

$$\sigma(c, c') = \begin{cases} 2 & : \text{ if } c, c' \in \Sigma \text{ and } c = c' \\ -1 & : \text{ otherwise} \end{cases}$$