
[ncs2021] 論文審查請求

1 message

Ling-Ju Hung <ljhung@ntub.edu.tw>
To: 莊傑 林 教授 <158778@mail.tku.edu.tw>

Wed, Oct 13, 2021 at 11:02 AM

林 教授：

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"Algorithms for the Constrained Longest Common Subsequence Problem with
t-length Substrings"。

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Best regards,

Ling-Ju Hung
National Taipei University of Business
ljhung@ntub.edu.tw

"Algorithms for the Constrained Longest Common Subsequence Problem with
t-length Substrings"

摘要

The longest common subsequence (LCS) problem and its variants, such as the constrained LCS (CLCS) problem, and the LCS with t-length substrings (LCSt) problem, are well-studied problems as the similarity measurement strings or biosequences. In this paper, we first define the new variant, which is the constrained longest common subsequence with t-length substrings (CLCSt) problem. Then, we propose three algorithms for solving the problem. The time complexity of the dynamic programming algorithm is $O(mnr)$, where m , n , and r are the lengths of the two target sequences and the constraint sequence, respectively. The row-wise algorithm is our second method, with $O(r \times \min\{mL+R, R \log L\} + m+n)$ time, where L denotes the answer length, and R denotes the number of t-match pairs between the two target sequences. Our third method is the diagonal algorithm with $O(rL(m-L) + R)$ time. As experimental results show, the diagonal algorithm is the most efficient.
Ling-Ju Hung

2021年臺灣網際網路研討會暨全國計算機會議

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