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Improved pattern-scan-order algorithms for string matching. (English) Zbl 1400.68266

Summary: The pattern scan order is a major factor affecting the performance of string matching algorithms. Depending on the pattern scan order, one can reduce the number of comparisons in a window or increase the shift length. Classical algorithms for string matching determine the pattern scan order only using the characteristics of a text and a pattern. However, if we additionally use the scan results at the time we determine each scan position of the pattern, we can improve the performance of string matching. In this paper we propose new pattern-scan-order algorithms that maximize shift lengths using scan results. We present the theoretical analysis and experimental results that these algorithms run faster than previous algorithms on average.

MSC: 68W32 Algorithms on strings

Keywords: string matching; pattern scan order; asymptotic speed

Full Text: DOI

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