

论文

并行MPS算术编码的性能分析

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摘要

利用多维二进制码流的统计规律, 基于MPS并行的算术编码不但避免了传统并行算术编码的复杂运算, 且不会影响其基本概率估计规律。该文运用全概率定理和统计平均思想从理论上分析了并行度与加速比、编码效率之间的关系, 指出并行度为2的MPS并行编码方案在编码速度和效率方面较其它并行度占有很大优势, 并行度3和4的编码方案在编码效率方面基本持平, 并加以试验证明。

关键词 [算术编码](#) [并行](#) [大符号](#) [状态转移](#)

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Performance Analysis of Arithmetic Code on Parallelized MPS

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Abstract

Arithmetic code on parallelized MPS(Most Probable Symbol) not only avoids complex operation of classical parallelized arithmetic code, but also does not inflect its basic probability estimation rule since utilizing statistic law of multidimensional binary coding. The relation between parallel degree, speedup ratio and coding efficiency is theoretically analyzed based on the theorem of complete probability and statistic average. It is pointed out the algorithm with 2 parallel degree is superior to others on the coding efficiency and speed, the algorithm of 3 parallel degree is equal to the one of 4 parallel degree on the coding efficiency. The result is verified by the experiment.

Key words [Arithmetic code](#) [Parallelization](#) [MPS\(Most Probable Symbol\)](#) [State transition](#)

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