

一种基于统计分析的多视点视频编码中

Direct 模式提前终止算法

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摘 要: 提出了一种针对多视点视频编码中 Direct 模式的提前终止算法. 该算法基于当前编码宏块相邻视点、时间及空间方向的已编码邻近宏块的编码信息, 提出了一个描述当前宏块的邻近块代价影响因子, 通过与阈值比较可对多数编码宏块直接选择 Direct 模式进行编码, 从而略过其他模式的相关计算. 实验结果表明, 与原始的多视点视频编码算法相比, 该算法可平均减少约 88.2% 的编码时间, 同时峰值信噪比仅下降约 0.29 dB, 编码比特率增加约 0.68%.

关键词: 多视点视频编码; Direct 模式; 率失真代价; 提前终止

Early Direct Mode Decision for Multi-view Video

Coding Based on the Statistical Analysis

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Abstract: In order to reduce the encoder's complexity, an early direct mode decision for MVC is proposed in this paper. Based on the best modes and their rate-distortion costs of encoded neighboring macroblocks which are located in the spatial, temporal and inter-view directions, the influence factor of neighboring macroblocks is used to describe the current macroblock. By comparing this influence factor with the threshold which is obtained by statistical analysis of error selection probability, the proposed algorithm directly select the direct mode for some macroblocks and ignore the calculation of the other remaining modes. The experimental results show that the proposed algorithm can achieve 88.2% of encoding time saving on average with little loss of coding performance with the reference full search encoder.

Key words: multi-view video coding (MVC); direct mode; rate-distortion cost; early decision

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