

图形、图像、模式识别

## 低复杂度的MPEG-2到H.264快速转码算法

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**摘要** 提出一种新的MPEG-2到H.264快速转码算法, 利用H.264宏块(MB)模式选择与MPEG-2运动补偿残差间的相关性, 将H.264宏块模式的选择转化为数据分类; 在MPEG-2解码时, 保存相关的宏块信息, 包括MB编码模式、编码块类型(CBPC)、MB残差的均值和方差, 解码后采用标准的H.264编码器对YUV图像编码, 并保存H.264宏块的编码模式, 采用机器学习算法得到决策树, 用于H.264编码模式的分类, 从而大大提高转码效率。

**关键词** [MPEG-2](#) [H.264](#) [编码模式](#) [机器学习](#) [决策树](#)

分类号

## Low-complexity video transcoding MPEG-2 to H.264

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### Abstract

This paper presents a macroblock (MB) mode decision algorithm for interframe prediction based on machine learning techniques to be used as part of a very low complexity video transcoder. The proposed approach is based on the hypothesis that MB coding mode decisions in H.264 video have a correlation with the distribution of the motion compensated residual in the MPEG-2 video. Authors save the MB information including MB coding modes, CBPC, the mean and variance of MB residual when decoding MPEG-2 video, then save the MB coding modes from H.264 encoder of YUV image. Authors also use data mining tools to exploit the correlation and derive decision trees to classify the incoming decoded MBs into one of the several coding modes in H.264. The proposed approach reduces the H.264 MB mode computation process into a decision tree lookup with very low complexity.

**Key words** [MPEG-2](#) [H.264](#) [coding mode](#) [machine learning](#) [decision tree](#)

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