

图形、图像、模式识别

内容自适应与DOI的场内去隔行研究

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摘要 提出了基于内容自适应与Direction Oriented Interpolation (DOI) 的视频场内去隔行。首先通过内容纹理分析将视频单场划分为边缘、平滑和纹理区域, 然后对不同区域采用不同的场内去隔行算法, 其中针对边缘重点区域采用DOI方法进行插值。DOI方法为利用上部和下部空间方向矢量信息获得更准确的边缘空间方向, 针对不同边缘方向具有自适应的搜索区域, 并具有较强的灵活性和准确性。实验结果表明, 该方法结果在图像主、客观质量上均优于线平均 (Line Averaging, LA)、边缘线平均 (Edge-based Line Averaging, ELA)、改进的边缘线平均 (Modified Edge-based Line Averaging, M-ELA) 和中值滤波等场内去隔行算法。

关键词 [去隔行](#) [内容自适应](#) [Direction Oriented Interpolation \(DOI\)](#) [边缘线平均](#)

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Research on content adaptive and DOI intra-filed de-interlacing

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Abstract

A content adaptive and Direction Oriented Interpolation (DOI) method is proposed for video intra-filed de-interlacing. At first, single video frame is divided to smooth, edge and texture areas by content texture analysis. Then different areas are interpolated by appropriated de-interlacing algorithms, and DOI method is used in edge area. DOI method adopts upper and lower spatial direction vector to get more accuracy edge spatial direction, adaptive search area for different edge orientations. Experiments show the proposed method outperforms existing intra-filed de-interlacing algorithms, such as Line Averaging (LA), Edge-based Line Averaging (ELA), Modified Edge-based Line Averaging (M-ELA) and median filters, in subjective and objective quality.

Key words [de-interlacing](#) [content adaptive](#) [Direction Oriented Interpolation \(DOI\)](#) [edge-based line average](#)

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