

## 基于边缘指导的快速动态超分辨率算法

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**摘要:** 引入一种适用于标清到高清或超高清视频的快速超分辨率算法.首先,基于图像的退化模型,对动态超分辨率算法的计算过程进行优化,降低算法的复杂度并加快算法的收敛速度;然后,利用前一帧的高分辨率图像信息和空域上的边缘指导插值信息,改善边缘的锯齿问题和收敛性;最后,利用基于最大后验概率去模糊的方法,进一步提高图像质量.实验结果表明,该算法较传统方法峰值信噪比有明显提高,运行时间大大减少.

**关键词:** 超分辨率;退化模型;去模糊;动态超分辨率;边缘指导插值;最大后验概率

## Fast Dynamic Super-Resolution Algorithm Based on Edge Direct

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**Abstract:** A fast super-resolution (SR) algorithm is introduced in this paper which is suitable for SD to HD or UHD. Firstly, the calculation process of dynamic super-resolution (DSR) is optimized based on image degradation model to reduce the complexity and accelerate the convergence of algorithm. Then, the information of previous high-resolution frame and spatial Edge Direct Interpolation (EDI) is exploited to reduce zigzag effect which appears in edge regions and accelerate convergence. Finally, the deblurring of image based on Maximum a Posteriori (MAP) is exploited to further improve the quality of image. After the test, the results show that compared with traditional methods, the PSNR is improved obviously and the running time is reduced greatly with the algorithm of this paper.

**Key words:** super-resolution; degradation model; deblurring; dynamic super-resolution; edge direct interpolation; maximum a posteriori

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