

论文与技术报告

多图像全景颜色特征分布线性变换不变性校正算法

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摘要:

针对多图像全景中颜色不一致问题, 本文提出一种多图像全景颜色特征分布线性变换不变性校正算法。首先, 利用相邻图像直方图形状的线性变换不变性, 计算出相邻图像之间的颜色校正参数, 然后, 利用参数传递得到非相邻图像之间的颜色校正参数; 为了得到具有颜色一致性的全景图像, 并降低参数传递所带来的误差, 通过构建基准图像度量函数选择最优的基准图像, 并以基准图像为源点, 利用单源最短路径算法优化获取各个图像到基准图像的传递路径。实验结果表明, 该算法能够增强多图像全景颜色的一致性, 而且对于光照和视角的变化也具有较好的鲁棒性。

关键词: 全景; 颜色校正; 线性变换不变性; 参数传递

The Color Correction Algorithm of Multi-image Panoramic by the Feature Distribution of the Linear Transformation Invariance

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Abstract:

In this paper, a color correction algorithm of multi-image panoramic by the feature distribution of the linear transformation invariance is proposed to solve the color inconsistency problem of the panoramic image. Firstly, the color correction parameters of adjacent images are obtained using the quality of histogram shape, the invariance of linear transformation, in the overlapping of adjacent images, then, the non-adjacent images' color correction parameters are obtained by parameter passing. In order to get the panoramic image with color consistency and minish the error caused by parameter passing. The reference image is selected by constructing the measurement function of reference image and the parameter passing path is optimized by Single Source Shortest Path Algorithm. The experimental results show that the algorithm can enhance the color consistency of the multi-image panoramic and has good robustness to the illumination and viewpoint.

Keywords: Panoramic color correction linear transformation invariance parameter passing

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