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基于特征点匹配的多视图图像校正

程明明, 王 贺, 安 平, 张 洋, 张兆杨

上海大学 通信与信息工程学院, 上海 200072, E-mail: cmm@shu.edu.cn

摘要:

多视图图像的校正是提高3DTV观看质量的关键步骤之一。现有的图像校正算法大多是双目或三目相机校正,对于平行或弧形相机阵列的多视图图像校正的研究较少,而且受相机标定参数和相机间距的影响较大。文章提出了一种对未标定的多目相机图像进行校正的方法,通过寻找匹配特征点,依据匹配点垂直视差的关系计算校正变换矩阵,用以对原图像进行校正变换。实验结果显示,图像间的垂直失配大为减少,校正后的图像能够提供良好的立体视觉主观测试效果。

关键词: 3DTV 图像校正 未标定图像 特征点匹配

Multi-View Images Rectification Based on Feature Points Matching

CHENG Ming-ming, WANG He, AN Ping, ZHANG Yang, ZHANG Zhao-yang

School of Communication and Information Engineering, Shanghai University, Shanghai 200072, China, E-mail: cmm@shu.edu.cn

Abstract:

The rectification of multi-view images is one of key techniques to improve the quality of 3DTV viewing. Most of the existing image rectification algorithms are for stereo or triple images, but fewer for images captured by parallel or arc multi-camera arrays, and subject to camera calibration parameters and camera spacing greatly. This paper presents an uncalibrated rectification algorithm for multi-view images captured by a multi-camera array. Without camera calibration, the rectification transformation matrix was calculated by searching for matched feature points and using the relationship of vertical parallax, and by which to rectify the original image. Experimental results show that the vertical mismatch between rectified images is greatly reduced, and the rectified images can provide good stereo vision of the subjective test.

Keywords: 3DTV image rectification un-calibrated image feature points matching

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通讯作者:

作者简介: 程明明(1984-),男,湖北黄梅人,硕士研究生,主要研究方向为多视点视频编码及图像校正。

作者Email: anping@shu.edu.cn

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