多深度相机标定下稀疏纹理图像三维超分辨率重构

茹金平

（郑州财经学院 艺术设计学院，河南 郑州 450000）

摘　要：传统基于学习模型的超分辨率重构方法运行复杂，重构的图像细节模糊，分辨率低.为了解决该种问题，提出多深度相机标定下稀疏纹理图像三维重构算法，给出了三维重构的检测数据序列，采用蓝屏法提取图像轮廓，通过 Bundler 开源软件包实现多深度相机标定，获取标定好的多视图图片.采用 SIFT 算法提取图片中的特征点，使用基于 PMVS 的图片三维重构算法，实现稀疏纹理图像的三维重构.分析实验结果可得，所提方法可改善系数纹理图像的分辨率，具有较高的运行性能和鲁棒性.

关键词：多深度；相机标定；稀疏纹理；图像；三维重构

Three Dimensional Super Resolution Reconstruction of Sparse Texture Image With Multi Depth Camera Calibration

RU Jin-ping

(Department of Art and Design, Zhengzhou Institute of Finance and Economics, Zhengzhou 450000,China)

Abstract: The super resolution reconstruction method based on learning model is complex, the reconstructed image is fuzzy and the resolution is low. In order to solve this kind of problem, put forward the sparse texture image reconstruction algorithm of multi camera calibration depth, gives the detection data sequence of 3D reconstruction, image contour extraction method using blue screen, multi depth camera calibration by the Bundler open source software, obtain good calibration of multi view images. Using SIFT algorithm to extract the feature points in the image, the use of three-dimensional reconstruction algorithm based on PMVS images, sparse texture image reconstruction. The experimental results show that the proposed method can improve the resolution of the coefficient texture image, and has high performance and robustness.

Key words： multi depth; camera calibration; sparse texture; image; 3D reconstruction

作者简介：

茹金平　女，(1980-)，讲师.研究方向为计算机应用、平面设计.

E-mail：rujinping@yahoo.cn.