计算机

双目立体视觉匹配的预处理技术

常淑华 [1], 宋艳秋 [2], 杨永敏 [3]

1. 吉林农业科技学院 信息工程学院, 吉林 吉林 132101; |2. 长春市希望高中, 长春 130022| 3. 哈尔滨工业大学 机器人技术与系统国家重点实验室, 哈尔滨 150080

摘要：

针对双目立体视觉图对区域匹配应用中存在的问题, 提出一种三阶段的匹配预处理方法. 该方法将小波阈值去噪算法和直方图均衡化技术相结合, 有效地去除了图像随机噪声和高斯噪声, 实现了立体图对间亮度差异的平衡, 并经过拉普拉斯锐化处理提高了图像对的对比度. 实验结果表明, 三阶段匹配预处理算法可有效提高立体图间的匹配准确率.

关键词： 双目立体视觉　小波阈值去噪　直方图均衡化　拉普拉斯算子

Matching Preprocessing Technology of Binocular Stereo Vision

CHANG Shu　hua [1], SONG Yan　qiu [2], YANG Yong　min [3]

1. Department of Information Engineering, Jilin Agricultural Science and Technology College, Jilin 132101,　Jilin Province, China|2. Changchun Hope |High School, Changchun 130022, China;　3. State Key Laboratory of Robotic and System, Harbin Institute of Technology, Harbin 150080, China

Abstract:

To solve the problem existing in the application of binocular stereo vision image　pair, a three　stages matching preprocessing method was proposed. This method combines the wavelet de　nosing algorithm and　histogram equalization method effectively. The random noise and Gauss noise of image are filtered and　luminance　difference between stereo image　pairs is balanced at the same time. Finally the contrast of image　pairs was improved by Laplace sharpen processing. The effectiveness of three　stages matching preprocessing algorithm was proved by experiment. The application of the algorithm could improve the matching accuracy of stereo image　pairs effectively.

Keywords: binocular stereo vision　wavelet threshold de\　noising　histogram equalization　Laplace operator

通讯作者: 杨永敏

作者简介：
作者Email: hitymyang@163.com

参考文献：

本刊中的类似文章

文章评论

反馈人		邮箱地址	
反馈标题		验证码	3198

扩展功能

本文信息

▶ Supporting info
▶ PDF(1235KB)
▶ [HTML全文]
▶ 参考文献[PDF]
▶ 参考文献

服务与反馈

▶ 把本文推荐给朋友
▶ 加入我的书架
▶ 加入引用管理器
▶ 引用本文
▶ Email Alert
▶ 文章反馈
▶ 浏览反馈信息

本文关键词相关文章

▶ 双目立体视觉
▶ 小波阈值去噪
▶ 直方图均衡化
▶ 拉普拉斯算子

本文作者相关文章

PubMed