计算机

双目立体视觉匹配的预处理技术

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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对间的匹配准确率.

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

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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

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