



基于APS-CMOS图像传感器的运动体捕捉方法

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Moving Object Capture Based on Characteristics of APS-CMOS Image Sensor

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摘要

随着运动体捕捉对嵌入式系统要求的提高,传统方法对分辨率、采集速度难以兼顾.把运动物捕捉分成对分辨率和速度侧重不同的运动检测和目标提取两个部分,利用有源像素结构APS-CMOS图像传感器可随机接入图像缓存的硬件特性,在数字信号处理(digital signal processing, DSP)平台上实现两个阶段特点各异的工作模式切换.这样就使得整个系统的采集速度和目标分辨率同时得到兼顾.而且,此方法使用一般器件就可实现传统方法需要高性能器件才能达到的技术指标.

关键词: [运动捕捉](#); [嵌入式系统](#); [有源像素结构CMOS图像传感器](#); [随机接入](#); [数字信号处理](#)

Abstract:

With the growing requirement of moving object capture in embedded systems, it is hard to tradeoff the conflict requirements of resolution and capture speed. The proposed method splits motion capture process into motion detection and target capture, which have different emphases on resolution and speed. Using an active-pixel architecture, CMOS image sensor's hardware characteristics can randomly access the sensor's image buffer to achieve the switch between working modes of varying trait on the digital signal processing (DSP) platform. Thus, both capture speed and resolution can be guaranteed. With the proposed method, ordinary chips can achieve better performances, which otherwise would require higher performance chips.

Keywords: [motion capture](#); [embedded system](#); [active pixel architecture CMOS image sensor](#); [random access](#); [digital signal processing \(DSP\)](#)

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