

论文

基于改进Mean Shift算法的实时视频目标跟踪

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摘要:

设计了一套嵌入式平台上实现的视频目标跟踪系统.该系统采用CMOS图像传感器获取视频信号,利用Z228多媒体芯片自带的ARM9处理器完成视频信号的控制,并通过MPEG-4硬件编码器实现视频信号的压缩.用Mean Shift算法跟踪运动目标,针对其收敛的局限性设置多个搜索点来提高其跟踪效果.通过减少采样点和标记已计算点来提高代码运行速度,增强了跟踪的实时性.实验结果表明,本系统能以27 fps速率连续稳定地实现视频目标的跟踪.

关键词: 嵌入式 视频目标跟踪 图像传感器 Mean Shift算法 实时

Real-time Video Target Tracking Based on Improved Mean Shift Arithmetic

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Abstract:

A video target tracking system is designed which is achieved in the embedded platform. The system acquires video signal by using CMOS image sensor, controls video signal in ARM9 processor which is obtained in Z228 multimedia chip, and compresses video signal through MPEG-4 hardware encoder. Meanwhile, the Mean Shift arithmetic is used to track moving target. Considering the convergence limitation, multiple search point is set to improve the tracking results. The operating speed of code is raised through decreasing sampling point and labeling computed points, thus the tracking instantaneity is enhanced. The experiment results indicate that this system can achieve video target tracking continually and steadily at the speed is 27 fps.

Keywords: Embedded Video target tracking Image sensor Mean Shift arithmetic Real-time

收稿日期 2011-07-13 修回日期 2011-09-06 网络版发布日期

DOI: 10.3788/gzxb20124104.0461

基金项目:

国家自然科学基金(No.60971074)资助

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