图形图像处理

基于快速归一化互相关函数的运动车辆阴影检测算法

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摘要　视频检测是智能交通系统中一种重要的检测手段，但是运动车辆阴影的存在严重影响了检测效果。为了减少阴影对检测系统中交通参数计算的影响，采用了一种快速归一化的互相关函数(FNCC)直接对灰度视频图像检测运动阴影。通过引入三个加总表(sum-table)和设定阴影检测区使传统归一化互相关函数（NCC）算法的复杂度大大降低。实验表明该算法可以实时有效地检测出运动车辆的阴影。

Abstract　Video detection plays an important role in intelligent transportation system, and the shadows of moving vehicles have serious influence on object detection and segmentation. By adopting a FNCC（Fast Normalized Cross-Correlation) algorithm in this paper, moving shadows were directly detected from grayscale video sequences. By applying three sum-tables in FNCC and detecting shadows within a confined range, the computational complexity had been significantly reduced compared with the traditional NCC（Normalized Cross-Correlation) algorithm. And the experimental results have shown that this method can detect moving vehicles' shadows efficiently and accurately.

关键词　视频检测　阴影检测　归一化互相关函数　加总表

Key words　video detection;shadow detection;normalized cross-correlation;sum-table

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