

图形、图像、模式识别

基于层次HMM的运动目标分割

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摘要 提出对差分图像用三层统计模型表示的思想: 前景运动汽车层、背景运动汽车层和运动阴影层, 并分别建立了各层的统计模型, 应用HMM对运动图像序列进行模型参数估计, 通过模型进行运动汽车分割。HMM利用图像序列帧之间的图像像素空间相关性和时间相关性, 从而完成模型参数的识别。通过MAP算法完成模型参数具体化, 不但用模型完成图像前景目标的分割, 同时在分割中自然区别了背景运动目标和阴影, 实现了复杂背景图像的运动汽车分割。实验结果表明方法能够有效地完成分割目的。

关键词 [分层模型](#) [隐马尔可夫模型](#) [运动汽车分割](#)

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HMM segmentation method based on statistical layered model for image of vehicle

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Abstract

An HMM segmentation method based on statistical layered model for an image including interest vehicle is brought forward. In statistical layered model, the interest vehicle is called foreground layer and the moving object is called background layer and shadow of moving objects is called shadow layer and they are expressed by the statistical model respectively. The model parameters are estimated by the HMM-based method of video sequences. HMM-based method makes use of the spatial relativity and time relativity of video sequences to accomplish recognition of model. The experimental results show that this method can succeed in segmenting the moving vehicle.

Key words [statistical layered model](#) [Hidden Markov Models \(HMM\)](#) [moving vehicle segmentation](#)

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