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无需跟踪的场景事件识别

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摘要
提出了一种用于视觉监控中行为识别的新颖方法. 该方法将相应于目标行为的场景事件建模为一组使用PCH (Pixel Cllange Histories)检测的自治像素级事件. 结合基于改进的MDL (Minimum DescrlptIon Length)的自动模型规则选择, EM(Expectation-Maximisation)算法被采用来聚类这些像素级的自治事件成为语义上更有意义的区域级的场景事件. 该方法是计算上有效的, 实验结果验证了它在不需匹配目标轨迹的情况下自动识别场景事件的有效性.

关键词 行为识别 事件识别 基本轨迹表达的相对事件

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Scene Event Recognition Without Tracking

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Abstract
We present a novel approach to behaviour recognition in visual surveillance under which scene events corresponding to object behaviours are modelled as groups of affiliated autonomous pixel level events automatically detected using Pixel Change Histories (PCHs). The Expectation Maximisation (EM) algorithm is employed to cluster these pixel-level events into semantically more meaningful blob-level scene events, with automatic model order selection using modified Minimum Description Length (MDL). The method is computationally efficient allowing for realtime performance. Experiments are presented to demonstrate the effectiveness of recognising these scene events without object trajectory matching.

Key words Activity and behaviour recognition event recognition event versus trajectory based representation

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