

图形、图像、模式识别

Kalman滤波器对混合高斯背景建模的改进

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摘要 在目前的计算机视觉应用中, 从视频序列中提取出运动目标是一个研究热点。针对传统方法在复杂多变环境下不能很好地检测出运动目标的问题, 提出了一种基于Kalman滤波理论的改进混合高斯背景建模方法。利用Kalman滤波器的时域递归低通滤波特点, 对混合高斯背景值进行了校正, 同时对混合高斯背景更新方法进行了改进, 与传统的混合高斯背景建模相比, 该方法较好地消除了背景光照剧烈变化时误将背景检测为前景的现象, 同时也能较好地消除背景噪声, 提高了系统的可靠性和鲁棒性。

关键词 [混合高斯模型](#) [Kalman滤波](#) [目标检测](#) [背景更新](#)

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Mixture Gaussian background modeling improved by Kalman filtering

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Abstract

In the current computer vision applications, the research on extracting moving objects from video sequences is very hot. Since the detection of moving objects can not be satisfactory with traditional methods, an improved mixture Gaussian background modeling method based on Kalman filtering theory is proposed. According to the characteristics of temporal recursive low pass of Kalman filtering, it is used to rectify the mixture Gaussian background model and improve the method of mixture Gaussian background modeling. Compared with traditional mixture Gaussian background model, the new method can eliminate system noise and inaccurate phenomenon that misjudges foreground as background when the lighting varies strongly. It improves the mixture Gaussian background model and makes it more reliable and robust.

Key words [mixture Gaussian model](#) [Kalman filtering](#) [objection detection](#) [background update](#)

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