

基于融合算法的视频目标跟踪研究

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摘要: 提出了一种嵌入型融合算法, 针对 Mean Shift 算法缺乏必要的模板更新、窗口宽度固定的不足, 利用形态学对目标边缘进行检测, 粒子滤波对目标进行预测, 实现 Mean Shift 算法模板实时更新以及核函数宽度自适应. 仿真结果表明, 在目标背景复杂多变、遮挡等情况下, 基于本文算法的视频目标跟踪具有较高的鲁棒性和精确度, 且实时性较好.

关键词: 视频目标跟踪; Mean Shift 算法; 形态学; 粒子滤波; 融合算法

Research on Video Target Tracking Based on Fusion Algorithm

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Abstract: This paper proposes a fusion algorithm for video target tracking. Mean shift algorithm lacks necessary template update and can't change the width of the window. Particle filter algorithm has a good prediction of the occlusion region. Morphological algorithm has an advantage in edge detection. The fusion of the three algorithms can complement each other. The scenario can update the template in real time, and be updated to the width of the kernel function. Simulation results show that the proposed scheme can improve the robustness, real-time and accuracy of target tracking, and solve the problem of video target tracking, such as complex background, occlusion, tracking delay and so on.

Key words: video target tracking; mean shift; morphology; particle filtering; fusion algorithm

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