

基于二维关节型人体模型和EM算法的人体跟踪

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摘要

提出一种跟踪单眼图像序列中的行人, 并恢复其运动参数的新方法. 在跟踪中采用了基于SPM(Sealed Prismatic Model)扩展的二维纸板人模型取代三维人体模型, 以获取更快的计算速度. 作者使用EM算法在概率框架下进行运动估计, 同时, 算法也考虑了混合的运动模型和运动约束, 以减小解的搜索空间. 试验结果证明了该方法的有效性.

关键词 [人体跟踪](#) [EM算法](#) [二维关节运动](#)

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Human Body Tracking Using EM Based on a 2-D Articulated Body Model

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Abstract

Visual tracking of human body movement is a key technology in a number of areas, such as visual surveillance and monitoring. In this paper we present a 2-D model-based method of human body tracking from a monocular video sequence. Morris & Rehg put forward a 2-D scaled prismatic model (SPM) for figure registration which has far fewer singularity problems than 3-D models. Here we extend it in a 2-D cardboard human body model with additional one DOF of width change. Based on this modified 2-D model rather than 3-D model in Bregler N- Malik's work, we also set up a mixture motion model for body movements and then solve motion parameters of the articulated body using EM in a statistical framework, where the model based kinematic constraints are incorporated in a linear form. Tracking results from real video sequences are encouraging.

Key words [Body tracking](#) [expectation-maximization](#) [2-D articulated motion](#)

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