布谷鸟搜索算法优化特征和分类器参数的人体行为识别

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摘　要： 特征和分类器参数都影响着行为识别的准确性和效率，为了获得更加理想的人体行为识别结果，提出一种布谷鸟搜索算法优化特征和分类器参数的行为识别模型(CS-RVM). 首先提取人体行为特征，并对进行归一化处理，然后采用相关向量机建立人体行为识别的分类器，并确定核函参数的取值范围，最后采用布谷鸟搜索算法对人体行为特征和人体行为识别分类器参数进行优化，仿真实验结明，CS-RVM 可以快速找到人体行为特征和人体行为识别分类器参数，提高了人体行为识别的正确率，而且识别效率也要优于对比模型.

关键词： 布谷鸟搜索算法；特征选择；相关向量机；行为识别

Human Behavior Recognition Based on Cuckoo Search Algorithm Optimizing Features and Classifier Parameters

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Abstract： Behavior features and classifier parameters directly influence the accuracy and efficiency of behavior recognition, in order to obtain ideal results for human action recognition, a recognition model is proposed by using cuckoo search algorithm optimizing behavior features and classifier parameters. Firstly, human behavior features are extracted and features are normalized, and secondly relevance vector machine is taken as the human behavior recognition classifier which the range of parameters are determined, finally, cuckoo search algorithm is used to optimize features and classifier parameters of human behavior to establish recognition model of human behavior. Simulation experimental results show that the proposed model can quickly and effectively find human behavior features and classifier parameters, can improve the recognition correct rate of human behavior, and the recognition efficiency is better than the contrast models.

Key words： Cuckoo search algorithm; feature selection; relevance vector machine; behavior recognition

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