短文

# 基于SIFT特征目标跟踪算法研究

蔺海峰, 宇峰, 宋涛

1. 西安通信学院　西安　710106

摘要

在尺度不变特征变换(Scale invariant feature transform, SIFT)特征匹配算法的基础上, 提出了一种基于累积特征的多目标的跟踪算法, 通过对目标的SIFT特征进行实时更新来去除由噪声(或形变)带来的``过时''特征信息, 保证了特征的稳定, 提高了匹配准确度. 实验结果表明, 本算法能够有效处理目标由于旋转、 形变而导致跟踪性能下降甚至跟踪目标丢失的问题, 同时对跟踪过程中多目标的关联, 也具有较好的鲁棒性.

关键词　　多目标跟踪　尺度不变特征变换　非刚性形变　稳定性

分类号

# Research on Object Tracking Algorithm Based on SIFT

LIN Hai-Feng, MA Yu-Feng, SONG Tao

1. Xi'an Communications Institute, Xi'an 710106

Abstract

Based on the scale invariant feature transform (SIFT), a novel motion-tracking algorithm for multi-targets utilizing the feature reserving priority of preference is proposed. The SIFT features of an object are updated in real time to store the stable features of a recent frame. Thus, it can realize the stable tracking of multi-objects by feature reserving priority of preference instead of prior information. Experimental results show that this method can not only handle the problems of target losing efficiently, which are induced by object$'$s rotation and translation, but also has nice robustness to the conjunction of multi-targets in the process of object tracking.

Key words　　Multiple objects tracking　scale invariant feature transform (SIFT)　non-rigid deformed　stability

通讯作者　蔺海峰 hf_jr@sina.com

作者个人主页　蔺海峰; 宇峰; 宋涛