Video based human activity recognition surveillance application

Author:

Abstract-

Keyword: depth maps, feature extract and representation, computer vision,

human activity recognition,

1. Introduction

Human activity recognition attempt automatically analysis and recognize human activities of subject with the environmental conditions using acquired information from the various types of sensors.

Human activity have an inherent hierarchical structure that indicates the different levels of it. ”gestures”, ”actions” ,”interaction”, ”group activities”, which can be considered as a four levels categorization. First: for the bottom level, there is an “gesture” that are simple motion of a part of body. for instance, “raising an arm and moving a leg”. After action primitive level, the action/activity comes as the second level, such as “strolling””” ”waving”, ”walking”. after that,“interaction” are human activities that involves at least two persons or objects, as an example, ”somebody utilize laptop”, ”two persons checking hands”.it is human to objects and human to human interaction. finally,” group activities” are that activities played by group composed of individuals or objects. For example ”group of people playing basketball”, ”fighting by two groups people”.

Human activity recognition has a hot scientific topic in computer vision community.it is involved in the development of many applications such as human computer interaction (HCI), virtual realities (VR), video surveillance for outdoor and indoor activities, home monitoring, video game, medical environment, patient monitoring, abnormal/normal activity identification, health care, and elderly people/children monitoring in specific area.

In the resent years, recognizing human activities from a series of video frame or still image is a challenging task due to problems, such as human behavior, Intra-class variability/inter-calss similarity, illumination changes, shadow effect, occlusion, camera jitters, noise image or frames in video, background clutter(moving background object or human) and view point etc. currently, there are limited intelligent human activity recognition system which can robustly and efficiently recognition each class of human activity.

In the recent researches, with the development of depth sensors, new opportunities arise to improve and advance this field. it is (compare depth image with gray/RGB advance/shortage)

(现如今深度图像是广泛应用在人类识别系统中的)

Generally, the recognition of human activity involves input information from sensors, preprocessing, detection and segmentation of objects, feature extraction and representation, and classification.

In this paper, what method and technique was used in HAR by author .

The rest of the paper is organized as follows: in section II,\*\*\*.in section III,\*\*\*.finally conclusion is draw in section X.

1. Related work (architecture review)

Most of the proposed techniques of video based human activity recognition was divided four categories: information resource, pro-processing, feature extraction and representation, and classification.in information resource

3.Propose approach

The propose human activity recognition system utilized depth image sequences from depth sensor. (processing architecture)

1. first extract the information from depth sensor, pre-processing

Feature extraction and representation

(global and local , in global we utilize silhouette from body shape.and then divide body part, the human action is processed by arm+hand,head,leg mainly, focus on local feature(A+H+L calculate distance and angle,and relativity of pose from hand(arm) with head or arm with leg )all of action is associative by A(hand)+H or arm(with hand)+leg it is easy to recognize action/pose individually.such as “eating”, the action is associative by arm(+hand)+head(mouth)or with spoon (it is interaction with object) Then we quantitative features.finally,is classification, any single ,two or three limb partly to be an activity.

The combine method. in feature segment and calculate is more easily due to it is only focus on location single arm or leg one times.it is higher accuracy by combine different limb.although different person will be

For instance,we always shake head and hand express “no” ,swing arm and alternate leg.(single pose is cant running )

3.Experiments

4.Experiments Result and discussion

5.Conclusion

In the paper... furthermore....in the future work,...

6.Conflict of interest

7.Acknowledgment

8.references