RECOGNITION OF HUMAN VISUAL ACTIVITIES ON THE BLOB FEATURES

PANKAJ A. SONWANE[a] AND SUDHIR D. SAWARKAR[b]

[a] Dept. of Computer Engineering, MGM'S CET Kamothe, Navi Mumbai, India.
[b] Datta Meghe College of Engineering Airoli, Thane, India.

Abstract

This paper is deals with blob feature for human activities analysis in the video. Human Activity Recognition is an active area of research in computer vision with wide scale applications in video surveillance, motion analysis, virtual reality interfaces, robot navigation and recognition, video indexing, browsing, HCI, choreography, sports video analysis etc. It consists of analyzing the characteristic features of various human actions and classifying them. The system consists of following stages: Background subtraction, tracking, feature extraction and classification. We analyze human activities in the sequential frames because human activities can be considered as a temporal object which contains a series of frames. Firstly, we establish a statistical background model and extract foreground object through background subtraction in the video stream. Then, we use foreground blobs of the current frame and a series of frames before the current frame to form a new feature image in certain rules. Finally, we combine the non-zero pixels in the feature image into blobs using the connected component method. Then each blob corresponds to an activity which is characterized by the blob appearance. By recognizing blob features we can recognize activities. We use Gaussian Mixture to model features for each type of human activities and employ Mahalanobis distance to measure the similarity.