

ABSTRACT

Nowadays, an automatic visitor counter devices that can be applied in many ways are still hard to find. Even if there's an automatic one, it still using infra red or human temperature detector that has a high cost. To solve the problem we have a solution by using webcam as a video acquisition device to get an automatic realtime visitor counting devices that has a lower cost.

Frame different is one of motion detection method based on video processing. This method can detect any movement on the video by taking several frame and find the difference. When there's a change on the frame the method will state it as a movement. Centroid is a matrix position that specifies the center of mass of the region from an object which has been through labelling process.

This final project will try to realize the system by taking two frame consecutively from a real time video. The difference on these two frame will be analyzed to find the motion. When a motion detected, the system will decide a central point that called centroid to analyze whether the objects are in or out by tracking the centroid movement.

The testing of this system uses four parameters: velocity of the object, light intensity, bar difference between the first and the last centroid, and how long the system has been run. The best performance of the system is reached when object move 0,5m/s in the afternoon, using 60 pixel for its centroid bar difference, on the first 8 minutes, its accuracy can reached 89.83%.

Key Code : room monitoring, motion detection, frame different, object tracking, centroid.