ABANDONED SOBJECT DETECTION

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ABSTRACT

Detecting static objects in video sequences has a high relevance in many surveillance scenarios like airports and railway stations. In this project we propose a system for the detection of static objects in crowded scenes that, based on the detection of two background models learning at different rates. The background is modelled by two mixtures of Gaussians with identical parameters except for the learning rate. The state machine provides the meaning for the interpretation of the results obtained from background subtraction and can be used to incorporate additional information cues, obtaining thus a flexible system especially suitable for real-life applications. The system was built in our surveillance application and successfully validated with several public datasets.

We combine short- and long-term background models to extract foreground objects, where each pixel in an input image is classified as a 2-bit code. Subsequently, we introduce a framework to identify static foreground regions based on the temporal transition of code patterns, and to determine whether the candidate regions contain abandoned objects by analyzing the back-traced trajectories of luggage owners.

Keyword :- *Image processing* **.**

1. INTRODUCTION

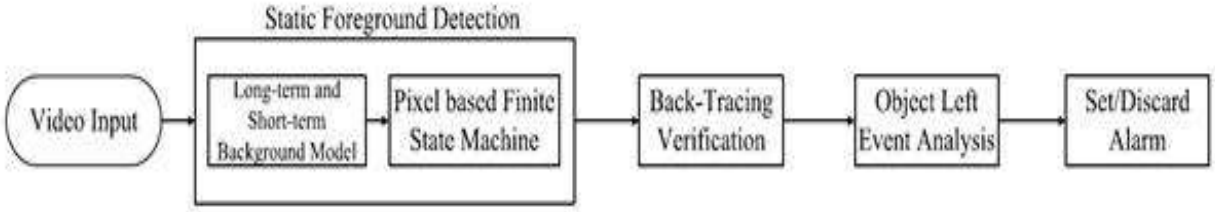
In the visual surveillance research, detecting abandoned luggage is referred to as the problem of abandoned-object or left-luggage detection. It is a crucial task for public security, particularly for identifying suspicious stationary items. Because there is no object type of category that can be assumed as having been abandoned, common object detection methods such as training an object detector for a particular category of objects are inappropriate for performing this task. To address this problem, foreground/background extraction techniques are suitable for identifying static foregrounds regions as left luggage candidates.

Visual surveillance is currently one of the most active research topics in vision. The increasing concern about public safety and law enforcement has caused a great deal of growth in the no. of surveillance cameras. Due to this fact, the necessity of automatic technique used which process human behavior and activities is more evident each day.

In proposed system is able to detect if a person carries an object, and a system tries to identify theft. In this work we present a method for detecting abandoned object. The system is able to recognize the left luggage at the scene, identify the person who has abandoned and baggage and send alarm if the object is abandoned for a period of time.

2.PROPOSED SYSTEM

Our proposed system is able to detect if a person carries an object, and a system tries to identify theft. In this work we present a method for detecting abandoned object. The system is able to recognize the left luggage at the scene, identify the person who has abandoned and baggage and send alarm if the object is abandoned for a period of time. We combine short- and long-term background models to extract foreground objects, where each pixel in an input image is classified as a 2-bit code. Subsequently, we introduce a framework to identify static foreground regions based on the temporal transition of code patterns, and to determine whether the candidate regions contain abandoned objects by analyzing the back-traced trajectories of luggage owners.



1. SYSTEM BLOCK DIAGRAM

3. WORKING

CAMERA

The input for the system is captured through the camera

RGB TO GRAY CONVERSION

Conversion of a color image into a gray scale image.

BACKGROUND SUBSTRACTION

Background subtraction involves two distinct processes that work in a closed loop: background modeling and foreground detection. In background modeling, a model of the background in the field of view of a camera is created and periodically updated, for example to account for illumination changes. In foreground detection, a decision is made as to whether a new intensity ts the background model; the resulting change labeled field is fed back into background modeling so that no foreground intensities contaminate the background model.

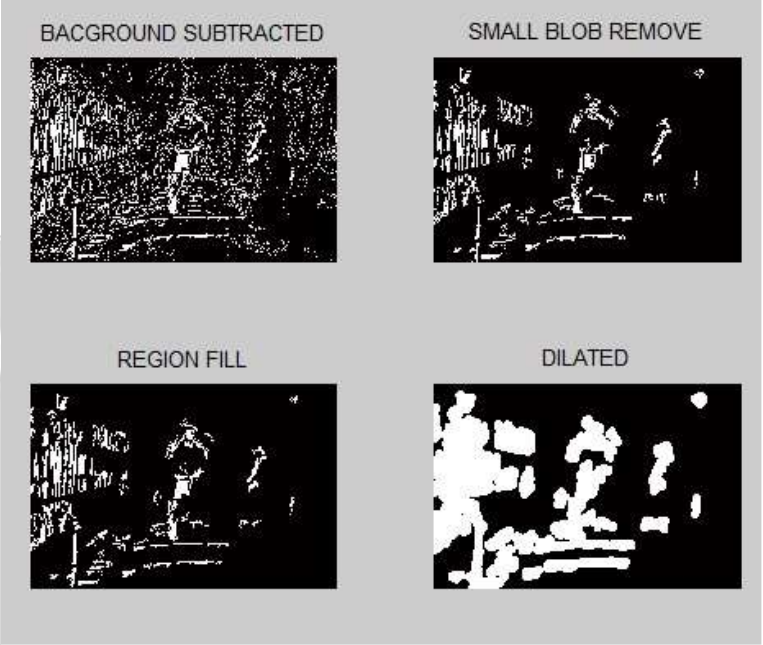


Figure : Background subtraction

PREPROCESSING

Preprocessing is the first step of any image processing algorithm. Different processing is done to get noiseless MRI such as median filter, morphological operation by erosion dilation, hole filling to get the proper morphological structure.

FILTERING

filtering is the process of removing noise from images.The capture frames are corrupted with different kinds of noise while image acquisition. Up to date, a number of filtering techniques have been reported and used if they were suitable for a variety of applications.

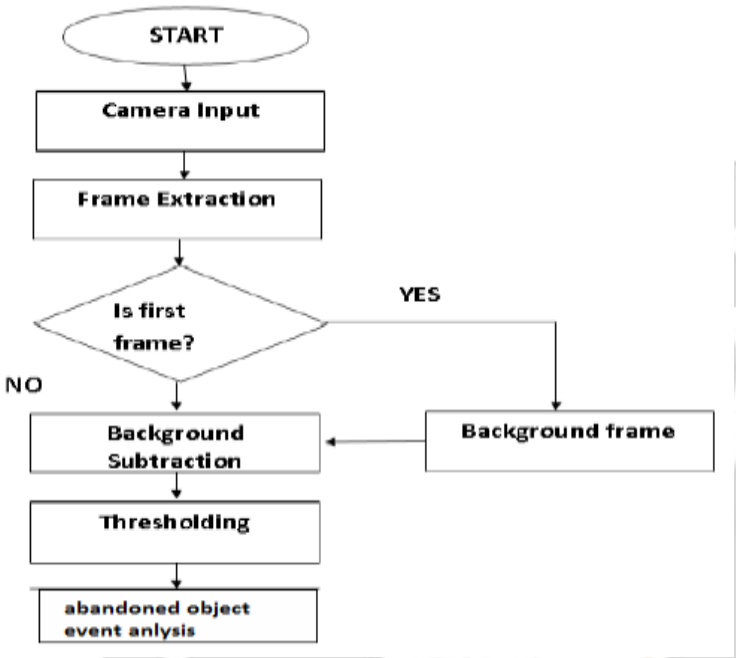
MARPHOLOGICAL OPERATION

Morphology is a broad set of image processing operations that process images based on shapes. Morphological operations apply a structuring element to an input image, creating an output image of the same size. In a morphological operation, the value of each pixel in the output image is based on a comparison of the corresponding pixel in the input image with its neighbors. By choosing the size and shape of the neighborhood, you can construct a morphological operation that is sensitive to specific shapes in the input image.

BACK TRACING VERIFICATION

Next, we verify whether the luggage is abandoned or simply placed on the ground for a short time by using the back-tracing verification procedure. Accordingly, our system first verifies whether the luggage owner is close to the luggage. If the owner does not return to his or her luggage, the object is considered abandoned.

FLOW CHART



4. CONCLUSION

This is an efficient system for security surveillance with high accuracy of detecting multiple abandoned object. Our work also keeps track of the carrier of the object and shows alarm when the carrier leaves the frame in this way the false alarm has been minimized. In conclusion we would like to say that implementing our system would reduce more number of incidents like Boston bombing and provide everyone with more safe and crime free environment.

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