Chapter 4

Smart Video Surveillance Systems and Identification of Human Behavior Analysis

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ABSTRACT

Smart surveillance cameras are placed in many places such as bank, hospital, toll gates, airports, etc. To take advantage of the video in real time, a human must monitor the system continuously in order to alert security officers if there is an emergency. Besides, for event detection a person can observe four cameras with good accuracy at a time. Therefore, this requires expensive human resources for real-time video surveillance using current technology. The framework of ATM video surveillance system encompassing various factors, such as image acquisition, background estimation, background subtraction, store, and further process like segmentation, people counting, and tracking are done in cloud environment briefly discussed in this chapter.

INTRODUCTION

Pedestrian detection is a vital and important task in several smart video surveillance systems. It offers the essential evidence for the semantic understanding of the video footages for video content analysis. It is a new technology for analyzing the video which includes video analytics, text analytics, and audio analytics. From this video, analytics has more challenging and gives a better understanding of the semantics of the video. Video Analytics utilizes numerical calculations to the screen, break down and oversee huge volumes of video. It carefully investigates video inputs; changing them into clever information which helps in making choices.

Video analytics applications can keep running at the inside (on servers or DVRs at the focal observing station), at the 'edge' (incorporated with cameras) or as a mix of both. The 'edge' arrangements are perfect to find live investigation. Focal continuous preparing can come up short on steam in view of the no. of cameras in the system, preparing power and the system data transmission; while in the 'edge' arrangement, each camera has committed handling. Clients with constrained transmission capacity on their systems can settle on an investigation arrangement at the 'edge', so just data on suspicious episodes gets sent through the system; and thus, doesn't go through system transfer speed.

Some run of the mill utilization of Video Analytics in security and surveillance includes, Security Access Point Monitoring, Intrusion Detection / Perimeter Protection, License Plate Recognition, Object Removal, Camera Tampering, Abandoned Object. Current video analytics solutions do work, however, in a compelled domain is a major limitation of video analytics.

Figure 1. Overview of background subtraction methods
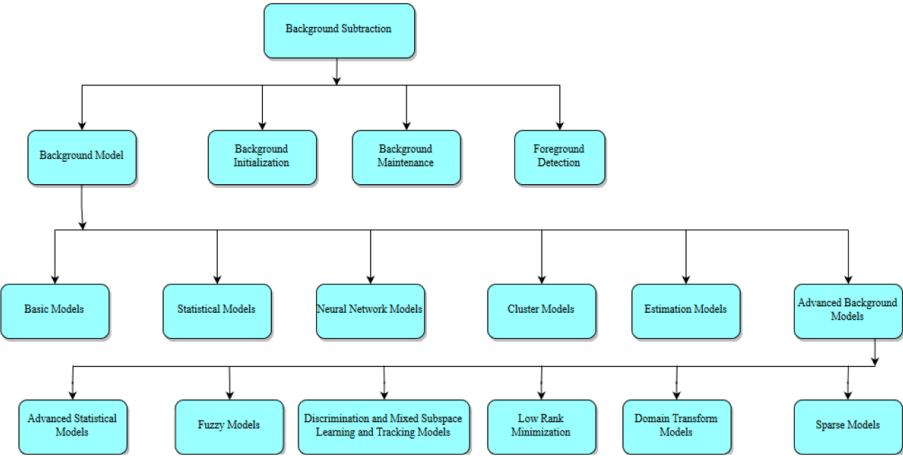
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