Crowd Motion Analysis In Deep Learning

Submitted By:

Name: Amandeep Rawat
Section: H
Roll No: 1918199/32
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

GRAPHIC ERA HILL UNVERSITY, DEHRADUN

Abstract

Time-group analysis shows an active area of research within a computer perspective
general public and forum analysis in particular. For the past 10 years, variety
crowd management methods in real time have received a lot of attention as a result
large census applications, public event management, disaster risk management,
security monitoring and so on.Although many sophisticated algorithms have been developed
task management; managing the crowds in real-time situations remains a challenge
is completely solved, especially in wild and unrestricted situations. In what is proposed
paper, we present a detailed review of the analysis and management of the crowd, focusing
on the situation- art forms of both controlled and unrestricted situations. The paper shows
both the pros and cons of high-quality methods. Presented methods
they include old-fashioned research activities in crowd management, and monitoring and
then to eliminate high-level approaches to new in-depth learning methods that have just
been introduced. A comparison of previous methods is provided, with a detailed discussion
of guidance for future research work.

INTRODUCTION

Crowds or large gatherings in various places such as entertainment events, airports, hospitals, stadiums, theme parks that deal with individuals almost daily. Activities are also very different from social and cultural religions. Unlike social and sport-related events, crowd-related situations Religious events such as Newyear and Diwali may not be possible to avoid .Therefore it is important to have a smart CrowdMonitoring System (CMS) to ensure security community , maintain high pedestrian traffic to prevent stamps , provision better emergency services in case of crowd -related emergencies and development services that provide good access by avoiding congestion . Negative ideas, crowd management , monitoring , and analytic shave potential fora number of applications.This includes but is not limited to the domain of security , emergencies resources , human mobility and private and public administration, census and analyzing group behavior and similar programs based on interaction .This integrity of applications provide a natural need for research and management development as well quantitative and quantitative analysis of individual behaviors quantitative analysis of groups, calculation and summarizing , congestion and prediction, flow analysis, predicting direct behavior, and bulk tracking .Ingeneral, group detection and congestion measurement proved to be useful with interactive steps for smart math and a few apps .Review article divides census into three categories: object-based, aggregated calculation, and calculation based on regression.

APPLICATION

• Military Applications : Number of combat jets, soldiers, and moving drones as well their movements etc. measured by appropriate crowd management systems . So i military capabilities can be measured using this system.

• Suspicious Activity : Crowd monitoring systems are used to reduce fear attacks social circles. Conventional machine learning methods do not work well in these cases .Other methods used for proper monitoring of such type detection functions can be checked on it.

• Security Monitoring : Large number of CCTV monitoring systems installed various places such as religious gatherings , airports , and public places allow better crowd monitoring programs .For example, an analytical system has been developed behavior and congestion times that ensure safety and security .Similarly , gifts a new way to identify risks by analyzing population congestion .Good monitoring is proposed a system that produces a visual report on the analysis of the crowd and its flow indifferent directions.

• Disaster Management : There are various congestion conditions such as music concerts and sporting events etc ., where half of the crowd charges randomly directions, which create life-threatening situations

Motivation

Effective crowd monitoring and management contribute to the running of various programs power of computer vision (CV) paradigm; However, crowd management in real time is far away unresolved, especially in wild situations and still facing many open challenges. The literature also reports some of the success stories, and some satisfactory research work has done also reported, especially in extreme cases. However, less uncontrollable Circumstances, mass management is still open to the research community. Several factors contribute to a solid real-time CMS and affect the performance of an intuitive CMS. Some of the features include shutters, lighting changes, a variety of sounds forms, changes in facial features and head shape, etc. In addition, the value of public posture The available data sets for crowd management are small. There are only a few data sets available with research work. We summarize some of these challenges as follows:

• When two or more objects are close together and as a result come together, in that conditions, it is difficult to see each item individually .As a result, monitoring once the accuracy of system measurement becomes difficult.

• The type of unusual arrangement of various related objects is dealt with these programs . This setting is called a clutter .The clutter is closely related to the sound of the image. which makes monitoring and monitoring very challenging.

Approaches

Crowd count gives a measure of the number of people or things. The calculation does not provide any information about the location. Congestion maps are available computer at different levels and provides very weak information about the person place. On the other hand, geography provides accurate information about the area. However, due to the small size of the environment, it is a relatively difficult task. So, the best way to handle all three tasks at once, using the fact that each case is related other. We discuss the various methods used to deal with crowd control and management system at this stage. We do not require any CMS tax; instead, we plan each real time CMS based on a basic approach that emphasizes its implementation. We also discussed enough when these proposed methods were used in the past. We presents a discussion about the themes and disadvantages of each method as well. We do three phases to monitor crowds including; local performance, behavior, and counting.Then each of these categories is further subdivided.
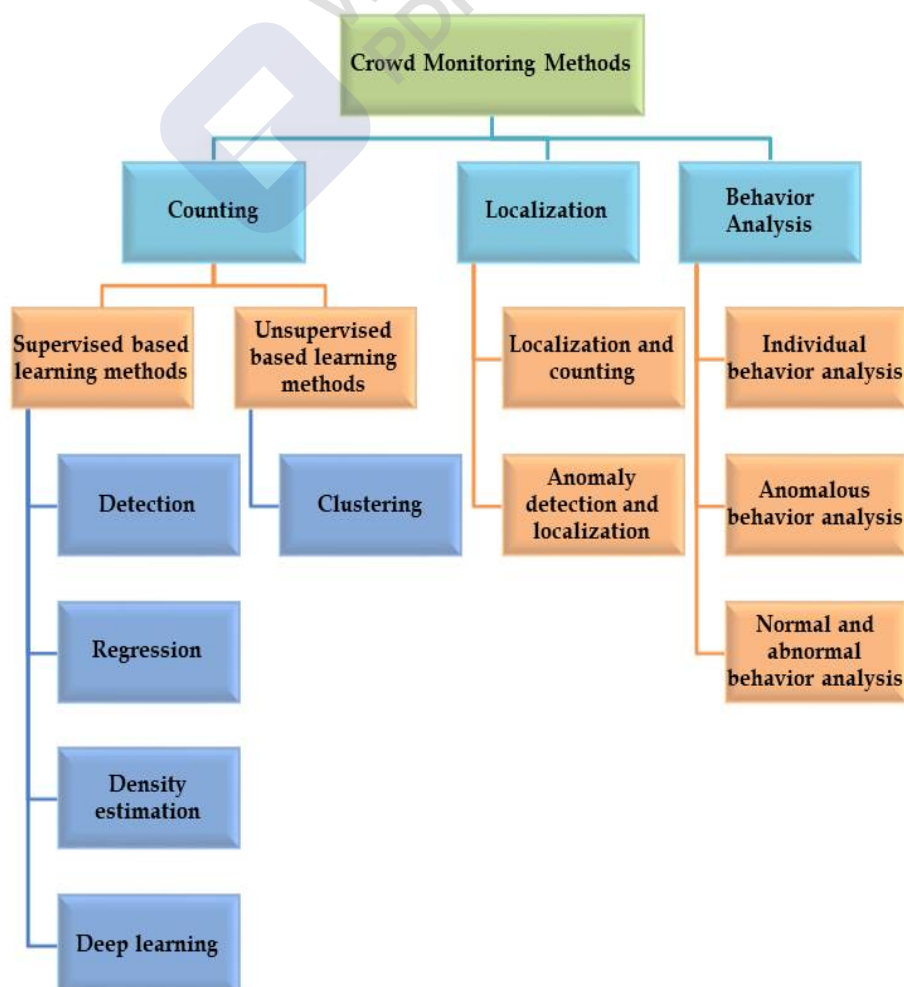
Supervised learning based methods:

Calculation methods: A window of the correct size slides across location (video / photo) to find people. After the discovery, the researchers came up with a variety of ideas methods use concepts of histogram of oriented gradients (HOG), shapelet, Haar features, and edgelet . Various machine learning techniques are used by researchers, however most of these methods fail over very crowded scenes. Excellent 3D shape model used by Zhao et al., reporting better results compared to SOA. Same job developed Ge and Collins. Some papers talk about counting ways to find out can be checked in references. These methods fail when overcrowding is high. Similarly, the performance of discovery-based methods go down when the scene is too crowded.

Regression based Method:

High density and complexity of the problem mentioned above is well treated in this way. Depression-based approaches are in two steps: feature modeling and retreat. Methods of removal feature include removal of domain, which is used to extract previous information. Better results and reported while using Blobs as a feature.The local feature includes the output edge once texture information from the data. Some of the local features used are these Gray co- event matrices, Local Binary Pattern (LBP).

SCREENSHOTS
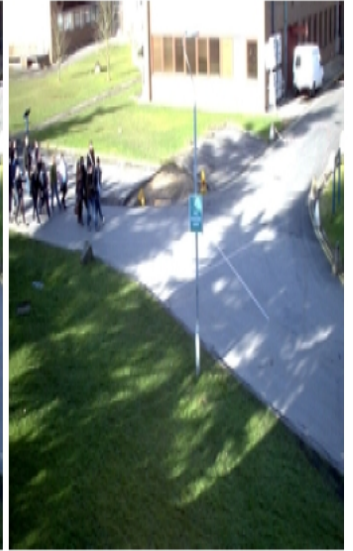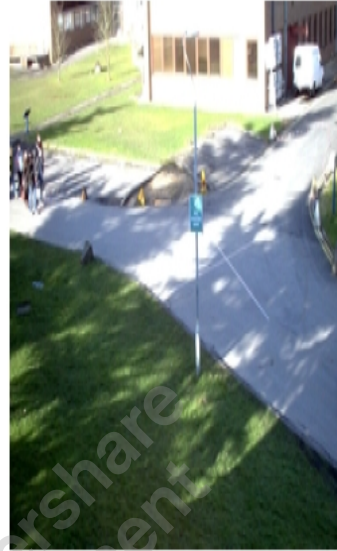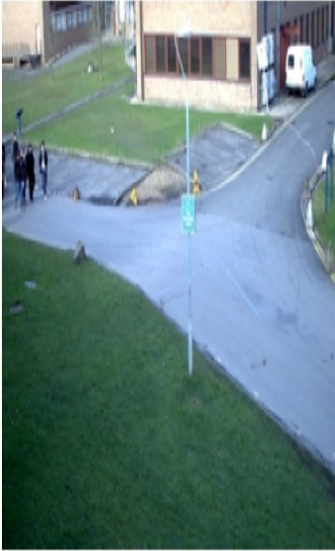
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