Flich- Theft Analyze using Posture Detection

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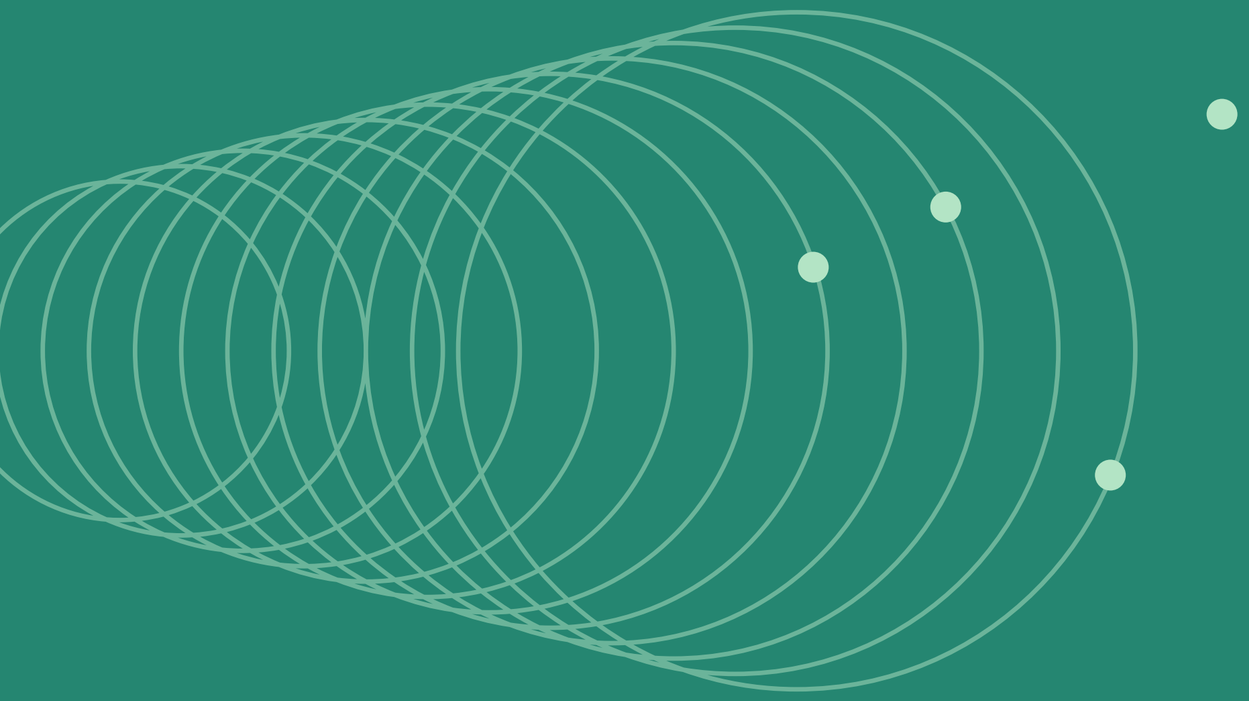

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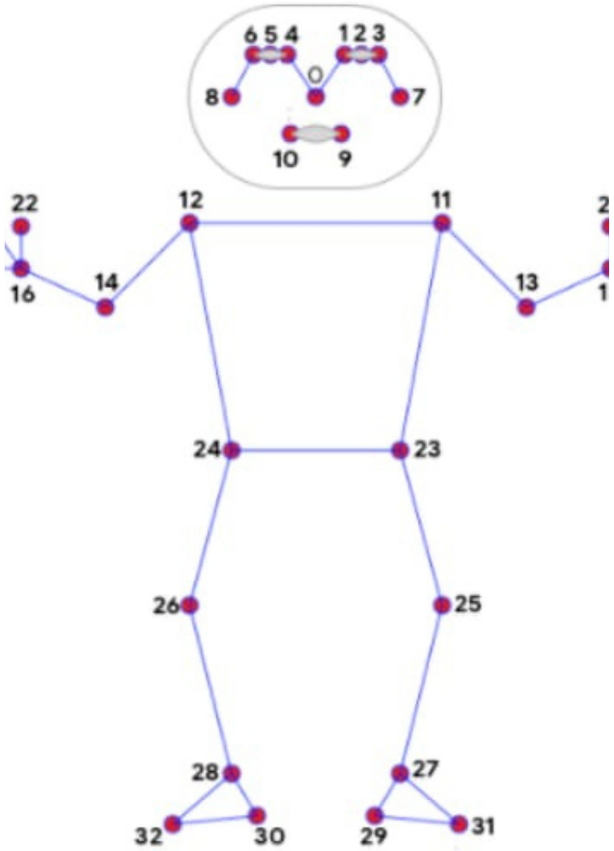

Pose Detection

For over a decade, Surveillance cameras have been the prime option to ensure security at places of interest. The main drawback of this system is that it simply stores video footage and fails to alert the concerned personnel in real-time about the ongoing crime. In this proposed system, Theft Analyzer, theft movement can be detected using our OpenCv tools and notified to the user in real time. The system uses pi camera and PIR sensors connected to Raspberry pi to detect the intrusion in real time. On detecting an theft motion, the concerned person (victim) is notified about the theft via alert on our alert software. The user also receives an image of the intruder and has access to the video footage of the theft immediately. This system can prove to be beneficial in jewelry shops, Ready-mades, Malls, Theaters, home etc.

Keywords: Frames, Image processing, IoT, PIR sensor, Raspberry Pi, OpenCv

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Introduction

Surveillance system is becoming more and more important for observing places of interest. The existing Surveillance systems merely store video footage. With such systems, the footage will be useful only after the occurrence of the crime is revealed, just to determine the sequence of actions that took place or to identify the intruder. Clearly, it fails to meet the requirements of ensuring total security. What we need is smarter surveillance systems that not only captures video but also alerts the user right away when something unusual takes place. There are many theft detection software available in the market. They provide a lot of features to the user. One of the major drawback of those systems is either their price or the user interface isn't very user friendly. Our approach to theft detection is to provide the use with an new advanced technologically, affordable and user friendly interface system. The system continuously captures of the place of interest and compares it against a trained image frame of the place of interest. The assumption here is that the surveillance system functions at the time (possibly at night) when there are no human security personnel inside to guard the place. A reference image would be an image of the empty room/shop and therefore presence of any human in the captured video would create a difference in the reference image and captured image and would flag a possible intrusion but that can be damn with Neural Network that we embedded and also A motion sensor is used as a complement to the camera surveillance to add some additional security to the place.

Survey

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Theft cases over inida on 2022

Problem statement

Theft is a common criminal activity that is prevailing over the years and is increasing day by day. To tackle this problem many surveillance systems have been introduced in the market. Some are simply based on video surveillance monitored by a human while some are AI-based capable of forecasting suspicious activity and raising an alarm. However, none of them are intelligent enough to identify what kind of suspicious activity is going to be carry out and what kind of protective measures should be taken in real-time. This Prototype presents the design of an effective surveillance system using machine learning cum CNN techniques.

Market/Customer/Business Need Assesment

Every place of investment needs secure it will good enough when it seems with Good technology and even compact in less investment. To envelop this need we invoke our prototype "Theft Detector using Pose Detection ". In-place of heavy security cameras, Security gaurds, Metal detecting device , Hand metal detector device . To enhance more satisfaction, Assurability over the company customer.

A Shop's investment is typically a current asset that it plans to secure it well. To build the secure environment our prototype will be step ahead with advance technology

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Target specification and charaterization

01

High accuracy compare to than surveillance camera

02

Low cost as compare to existing product.

03

Risk can be reduced by predicting the theft at shops's products and service in the future by CNN

External Search

- https://vitalflux.com/warehouse-management-machine-learning-use-cases/
- https://medium.com/analytics-vidhya/theft-detection-using-machine-learning-a4232ea51f1c
- https://www.researchgate.net/publication/356689617_Theft_Detection_and_Monitoring_System_Using_Machine_Learning
- https://www.analyticsvidhya.com/blog/2021/05/pose-estimation-using-opencv/

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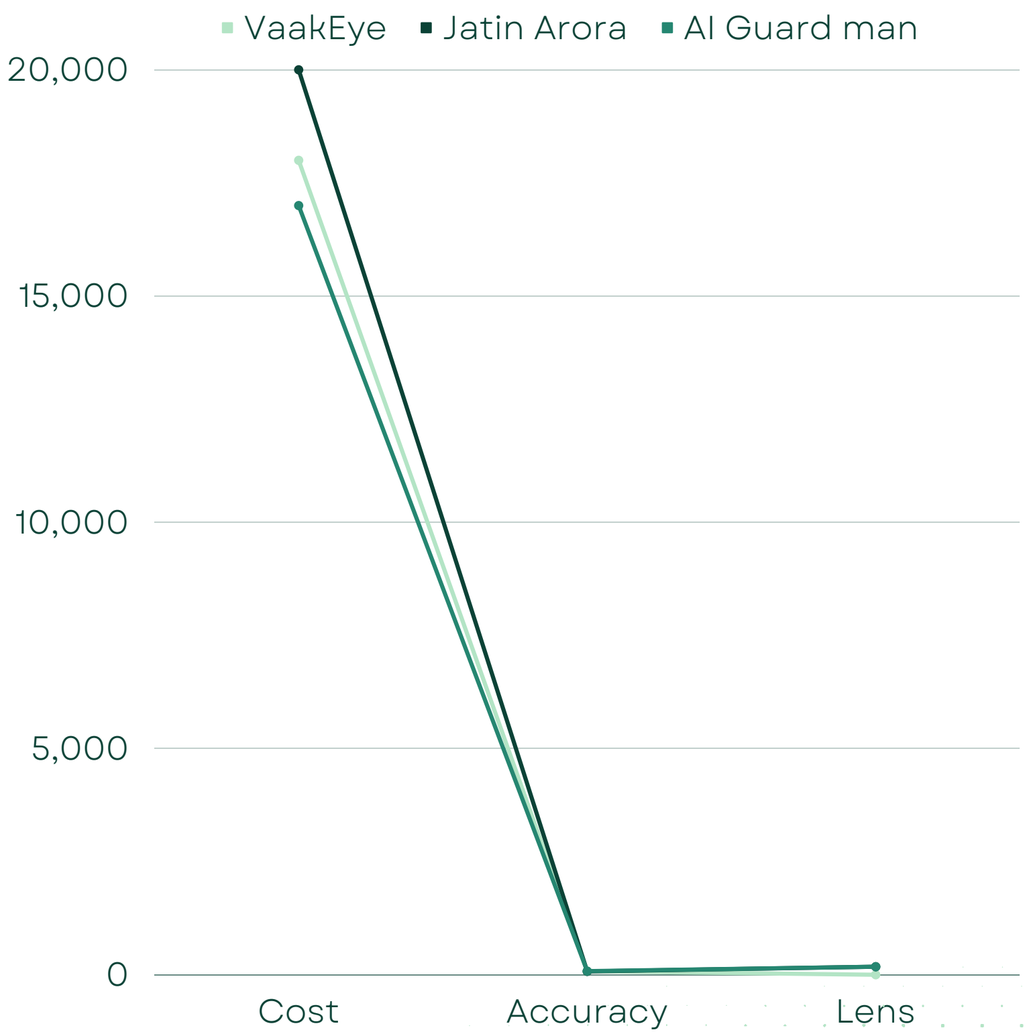
Competitor Analysis

Here with competitors Vaakeye,jatin Arora,AI Gaurd man had accuracy less than 82% which can be increased by 92% of accuracy with our CNN Model,and also uniquely identify by our cost expensive 14000.here we adopted raspberry pie camera of lens 270.



Source: Add your references here.

Applicable Patents

- https://patents.google.com/patent/US20130229274#similarDocuments

- https://patents.google.com/patent/US20130041623A1/en

Applicable Regulation

- Patents on ML algorithms Imposed
- Protection/ownnership regulations
- Being responsible by design
- Government forum for businesses
- Review of existing work authority regulations.

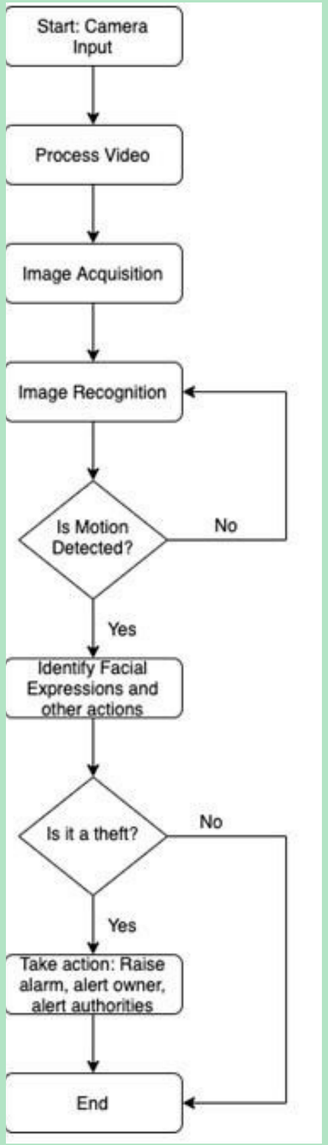
Applicable Constraints

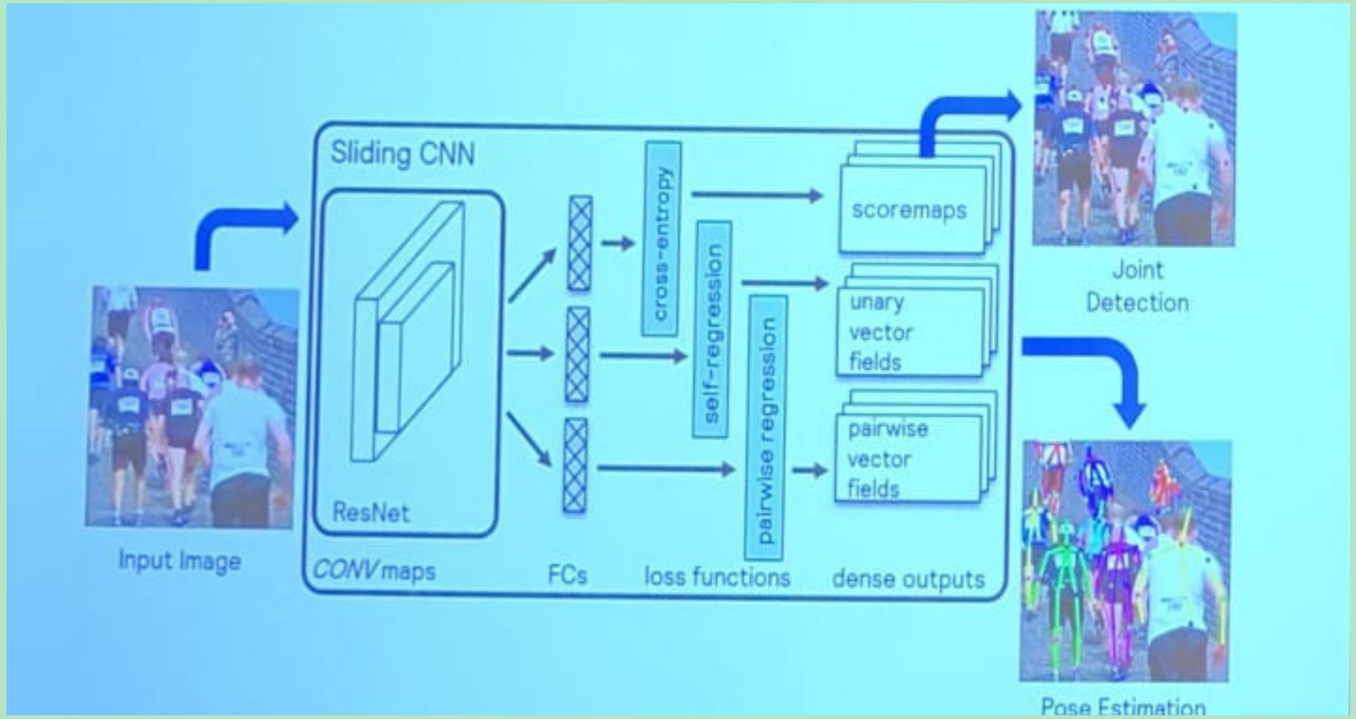
- Fluctuation is in demand
- Damn of Live Alert System
- Backlogs of High accurate Detection
- Rapid Evacuation of alert to the user on theft detection
- Sortage in supply

Concept Development

The advent of Internet of Things is the network of physical objects or “things” embedded with electronics, software, sensors and network activity that enables objects to collect and exchange data. The CV Libary allows objects to be sensed and Predicted remotely across existing network infrastructures by CNN, creating opportunities for more direct integration between physical world and computer based systems resulting in improved efficiency, accuracy and economic benefit. IOT with Raspberry pi has been implemented for Shop security through embedded system and an interface has given to all cell phones which belong to members of Shop. Theft detection is at racking technology used to identify and authenticate tags that are applied. This project has Motion sensor that senses the culprit and camera clicks the picture, so that an image along with an alert message is sent to server from which the owner get notified through Our Software message. In this system, the doors are automatically locked and alert the surrounding by blowing an alarm as soon as the motion of the intruder is detected. The camera records the video and uploads it on the cloud server. The camera in this system also works in dark environments.

Final Design& Model Implementation





Conclusion

In this prototype, we introduced a Spy Theft Detector, developed as a solution to detect and alert about ongoing theft accurately. The proposed system succeeds in detecting intrusion everytime there is movement or person’s presence inside the shop . Our system works exceptionally well with negligible or no false alarms. The present setup of the project assumes some minimum lighting in the room. The system may have to be upgraded to contain IR cameras to work equally well in complete darkness.In Future, the accuracy can be improved by collecting the feedbacks from the user.