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Pedestrian Walk Exposure System through Multiple Classifiers

Bindushree V[1]

[1]*Bindushree V, ACU and BGSIT, Bellur Cross, Mandya.*
Assistant Professor, Dept. of Computer Science and Engineering, BGSIT College, Karnataka, India

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Abstract - *This work proposes a narrative practice to support the bodily challenged people to cross the road near the traffic signal or in the ambler crossing with the help of habitual video supervision. 1.8m (width) × 2.2m is allocated for walking zone based on the rules by Indian Road Corporation. 1800mm width is held in reserve for wheel chair group in pedestrian. Recognition of stirring objects in a firm place desires the high protection level. Image processing segmentation algorithm plays an imperative part to track the moving object in the preset pedestrian voyage which can assist the physically challenged people or the elderly person. Various morphological filtering operations increase the eminence of segmenting the moving person in the video. This methodology employs histogram of Gaussian detection and object detection is done. The future work improves it results by 0.71% accuracy. This work helps the physically challenged to cross the pedestrian in a secure mode and helps for self-directed vehicles.*

Key Words: **HOG, SVM Classification, Image Processing**

1. INTRODUCTION

Video surveillance is a thriving field for object tracking. Video surveillance with human is a very time consuming process. Hence machine has to analyze the video and extract the obligatory information for auxiliary application. Many soft computing algorithms have the competence to routinely detect various objects such as person, vehicle, animals, and equipment etc. Analyze a scrupulous place for business and security purpose is called as video surveillance. The connotation of this system is to help the physically challenged people and elders to cross the traffic signal very safety. Video surveillance consequence is applicable in numerous fields known as missile tracking, security purpose, medical laparoscopy, moving robot design during the building crash, road and forest accident prevention etc.

1.1 Existing Work

The existing work was dedicated to accumulate appropriate videos of pedestrians crossing near the zebra crossings. This work investigates the characteristics of pedestrian finding and actions analysis. The behaviour scrutiny includes, eye gawp face appearance, pose, body motion and hand movements. Advance machine learning techniques are used to solve these tasks.

1.2 Methods Used

The study describes a zebra crossing finding method for functioning an intellectual vehicle. This work adapts a morphological filter followed by parallel protuberance to extort zebra crossing regions. Then self-similarity identification method is employed to sector the zebra crossing region. The effort achieves an exactness of 98.5%. But this system, fails to supervise the traffic signal and its manage operations. The standard time taken to capture one frame is about 57.24 Ms. The road scene segmentation process has developed using convolutional neural network. This CNN extracts the road scene from the 3D scene. The developed algorithm generates trained labels from general image data set. From the qualified labels, the real time road scenes can be compared and analyzed to comprehend the road images. This work combines online images with off line images. Compared to the baseline image testing methods, there is a 7% enhancement of accuracy in the noisy image.

The recent work for vehicle based mobile mapping system for automatic ambler crossing.

The given model can be working in the different situation and light conditions. SVM machine learning algorithm is used to avoid fake identification. The main benefit of this system is to detect perfectly even in defilement and impairment traffic situation of roads. Identification of pedestrians has been done in the work by combining motion information with image strength information. The detector employed with Adaboost neural arrangement algorithm to detect a walking person as well as motion appearing information. This study work resourcefully, even in the low decision images such as rain or snow environments. For pre-processing it utilizes a simple rectangular filter with minimum extraction time of 0.25 ms to handle 360 × 240 image size.

HOG and LBPH methods worked in concert with SVM algorithm is in use here. This work can put in a navigational regulation for visually impaired people.

2. Evaluation between future and existing methods

This gives the comparison of our proposed method with exiting methods to show how effectively its achieves accuracy

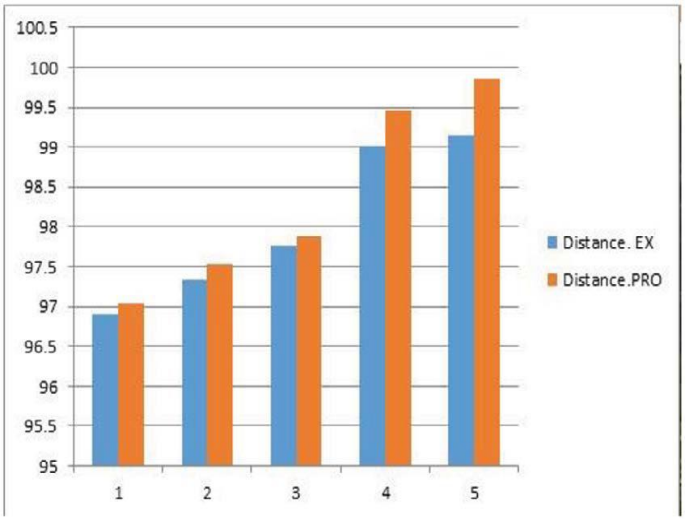

Fig -1: comparison of distance

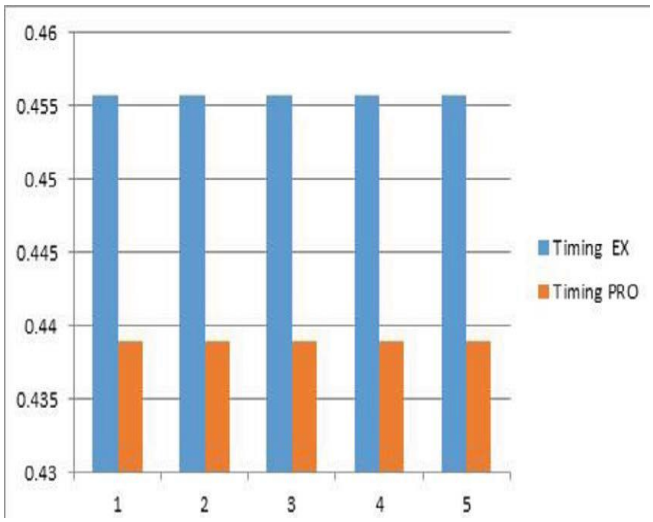

Fig -2: comparison of distance, velocity and speed.

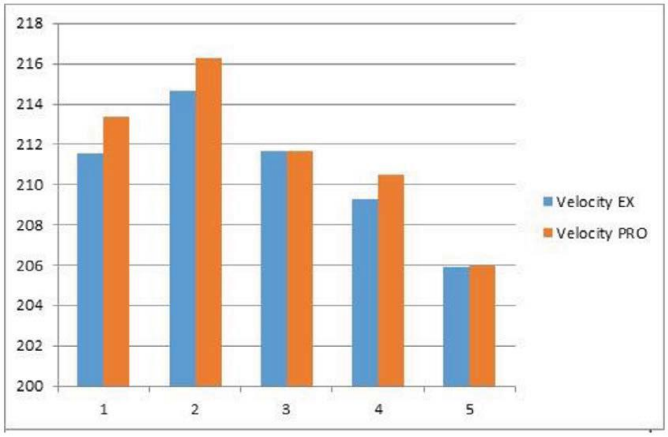

Fig -3: comparison of velocity.

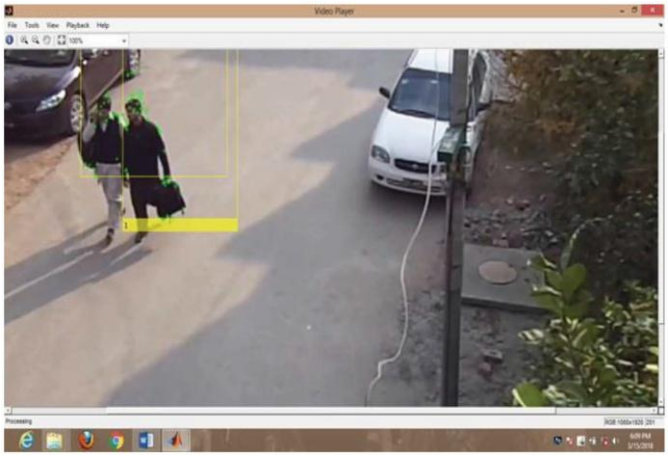

Fig -4: Object tracking result.

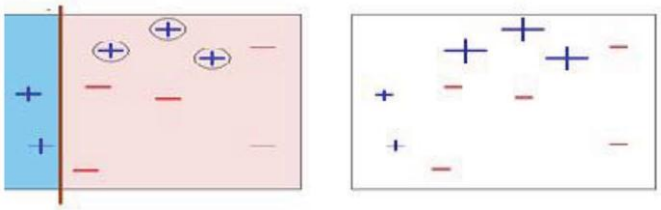

Fig -5:Experiment result, First Classifier.

3. CONCLUSION

The work pedestrian stride concealment structure is accomplished in the course of multiple classifiers and the detection rates are practical with some of the active methods to rendezvous in terms of both recital and operation time. The tracking technique is responsible for tracking the human activities by unique features. Histogram of gradient method is used for object tracking together with its increase in speed. Hence this method can be used for various applications that involve object tracking.

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