

Designing an Automated System for Identification And Reckoning Of Livestock

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ABSTRACT: Livestock sectors are considered major sectors. It plays an important role in national economy and social economic development of the country. It also plays important role in the rural economy as supplementing family incomes and generating gainful employment in the rural sector. Indian livestock industry makes up for a significant amount of world's livestock resources. The most common and redundant job of a rancher or herdsman is counting their herd to derive a headcount so they can determine livestock availability. It's a task that's done once a day, every day. It takes a large amount of the rancher's or herdsman's time and thus an automated solution for identification and reckoning of livestock using image processing is proposed.

KEYWORDS –Raspberry Pi or Arduino ,Camera, Open cv.

I. INTRODUCTION

Livestock subsector has an enormous contribution to developing countries economy. Especially in the provision of food for the growing human population, supply of raw materials to the industrial sector A good (AGDP), and about 40% of the global GDP and serves as the fastest growing agricultural market, a major contributor to food and as well as serving as an vital source of employment for almost 1 billion poor people. Livestock is an importance source of manure for crop production and fuel for domestic use. It is a source of minimizing use of non-renewable energy. Livestock, an important source of income for the farmers and rural poor people.

Objective of this work :

- To capture the image of the livestock's using camera.
- To identify the livestock and classifying them using image processing.
- And detect if any other animal is with the animal folk so the farmer can take suitable action based on the type of the intruder.
- And obtain the count of the livestock.

II. LITERATURE REVIEW

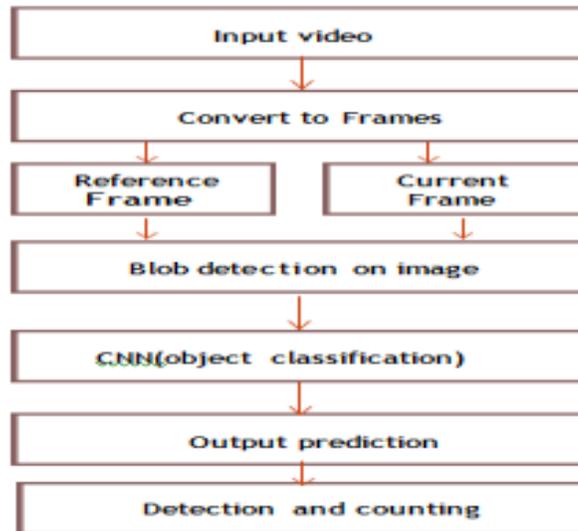
“Motion Detection for Security Surveillance”(Prof. Joshi Vilas, Mergal Bhauso, BorateRohan,2016)

This system will monitor when motion detected, the Raspberry Pi will control the Raspberry Pi camera to take a picture and sent out image to the user according to the program written in python environment.

“Outdoor wildlife motion triggered camera”(Shafika,Suhaimi,2015)This project Outdoor Wildlife Motion Triggered Camera is develop to help biologist monitor and study about the wildlife behavior and natural habitat so they can control the wildlife extinction

“Robust Real-Time Periodic Motion Detection”(RossCutlerandLarry,2012)A real- time system has been implemented to track and classify objects using periodicity. Examples of object classification (people, running dogs, vehicles), person counting, and non-stationary periodicity are provided.

III. ARCHITECTURE



IV. METHODOLOGY

- Image/video acquisition from the camera
- Convert video to frames.
- Store images of each animal as database which is used as training set for our program Compare camera captured frames with the database.
- Use imread function to read the image and Preprocessing is done on that image. Perform Blob detection on the frame and blobs are matched with images from training database images.
- And check if it is matching or not.
- To identification of that animal is desired or not. An array is created and program is written for each animal to be identified.
- To obtain the count- we use if statements to increment count when identified.
- we obtain the results of Identification and Reckoning of Livestock.

V. IMPLEMENTATION

Hardware Implementation:

Camera is used to collect database either video and image of the livestock in real-time for training set data and testing data which are used during the image processing techniques.

Software Implementation:

The image that is sent by the camera is received by the PC for classification of an animal. Database is created and the set of sample images are stored in it. The program consists of functions such as index Image, image Set and retrieve Image. The Image Set is used to hold a collection of images. Index Image is used to create an image search index. Index Image is used with the retrieve Image function to search for images. The captured image is given as query image to the processing system. The retrieve Image function takes two arguments, a query image and the image stored in the database. The resultant is the indices corresponding to images within image Index that are visually similar to the query image. The image IDs output contains the indices in ranked order, from the most to least similar match. The value match range is from 0-1. If the value is 0, then the image is not matched. If it is 1, then the query image is same as that of the stored image. If the value is found between that of 0-1, then the query image falls under the category of the stored image i.e., the contents in the query image are same as that of the stored image. If

the name of the image matches with that of the regular expression of the image then the animal is our livestock otherwise it is an intruder animal. If the score is in the range of 0.1 to 0.9, then the image is matched with that of the stored image.

VI. CONCLUSION

Now a day's livestock play an important role in most farming system throughout the world. It includes animal husbandry, dairy and fisheries sector are considerable major sectors. It plays an important role in national economy and social economy development of the country,

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