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AI Integration to Cameras Advancement for CCTV & Memory

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ABSTRACT: The main objective of this paper is to provide the better data analysis of the CCTV recording so that we can save our time and memory as well. In case of CCTV the main problem was the storage we need a large memory size for the CCTV and if the hard disk will be full then there will be two possibilities either the past data will deleted or the future data will not be recorded, to overcome this problem we came up with this idea which captures images only when any movement detects.

KEYWORDS: CCTV implementation, artificial intelligence, better data analysis, memory.

I. INTRODUCTION

21st century is the world of science. Today science and technology is making a rapid progress. In the past few decades technology has scaled new heights, what seemed impossible just years ago is now being seen everywhere and even bettered with each passing day. Every day, scientists are coming with new inventions and ways to solve problems. As we know that every act of human is motivated by some or another reasons, so is our project. By this project are trying to make things easier and simpler and focus on the main points that are written in an image by using MATLAB. Here we add features to existing CCTV cam working that can be partially classified under Artificial Intelligence. Here we are continuously processing the data by capturing live proceedings and check it with reference data image and whenever it found any change with previous stored data than only it goes for storage of image otherwise it remains unprocessed. At the end we got multiple images stored on a variable with only use as storage of multiple images only at the time when movement is detected on camera range. In this project we used a term AI that is artificial intelligent. That means the capability of a machine to imitate intelligent human Behaviour .MATLAB, which stands for Matrix Laboratory is a state-of-the-art mathematical software package, which is used extensively in booth academia and industry. It is an interactive program for numerical computation and data visualization CCTV cams are records continuous video for the security purpose and store the recorded data for future analysis. That can be necessary as well as unnecessary data that required and waste a lot memory. So in order to save the memory we implement the old traditional way of recoding video and introduce the image capturing format which only captures the image when it is found any change there.

II. METHODOLOGY

The project aims to make a tool which can convert a digital captured image into data format .Our aim of making this project to help those people who wants only specific part in particular format of image. First of all we have taken an image through any device and save it in desired format so that it can be acceptable by MATLAB to be read.
The next step of our project is IMAGE PREPROCESSING in MATLAB. This image with 3 frames background and we can see lot of noise in background. Then first of all we have performed image data on this jpg image.

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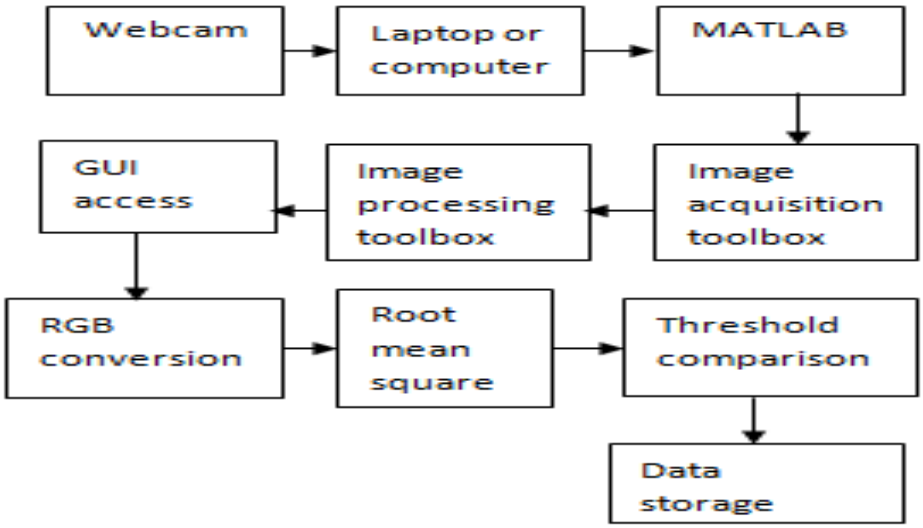
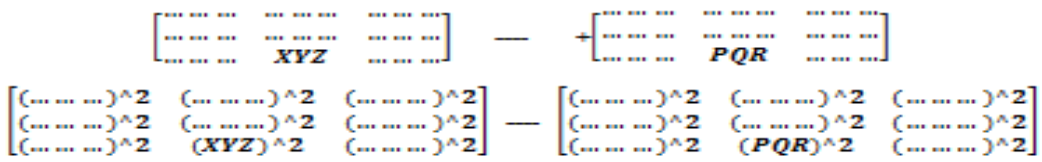


Fig.1 –Block diagram

When we got a GUI for button based operation handling image then we access the appearing on the reference of the image. Then after this we get new images which just contain only two pixel value.

Flow Chart



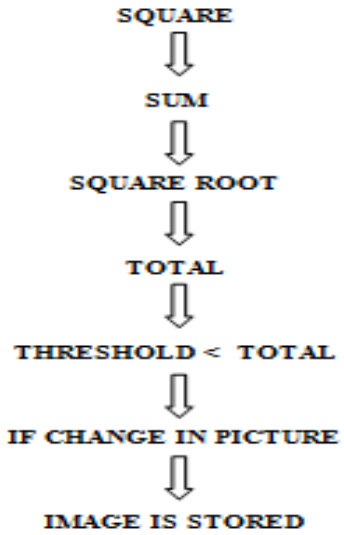


Fig. 2

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After this second stage of now we go for root mean square error calculation between previous reference image and new live captured image. Now with the threshold it compares overall error calculation and store the image of desired changes. After above processing on the images we show storage data image one by one that help us to find out the movement and activity specific time snaps which takes lesser memory and less time consuming in analysis.

III. PROPOSED SYSTEM

CCTV cameras are record continuous video for the security purpose and store the recorded data for the future analysis. So in the CCTV we implement something useful. In the CCTV the necessary as well as unnecessary data is also recorded that required a lot memory to store.
So In case of CCTV the main problem was the storage we needs a large memory size for the CCTV and if the hard disk will be full then there will be two possibilities occur either the past data will deleted or the future data will not be recorded, to overcome this problem we came up with this idea which captures images only when any movement detects.

IV. RESULT

Reference Image

Variation Captured 1

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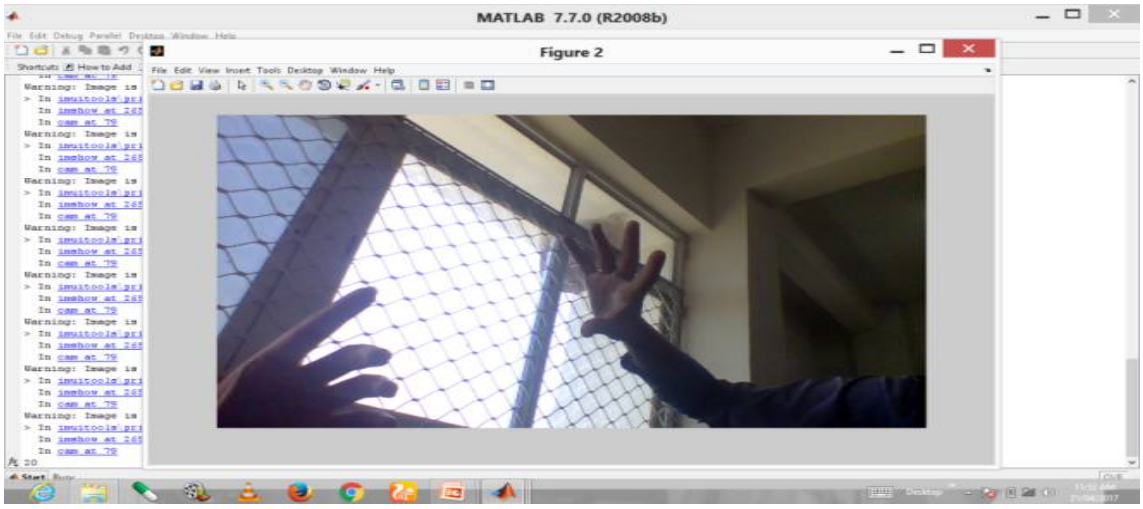
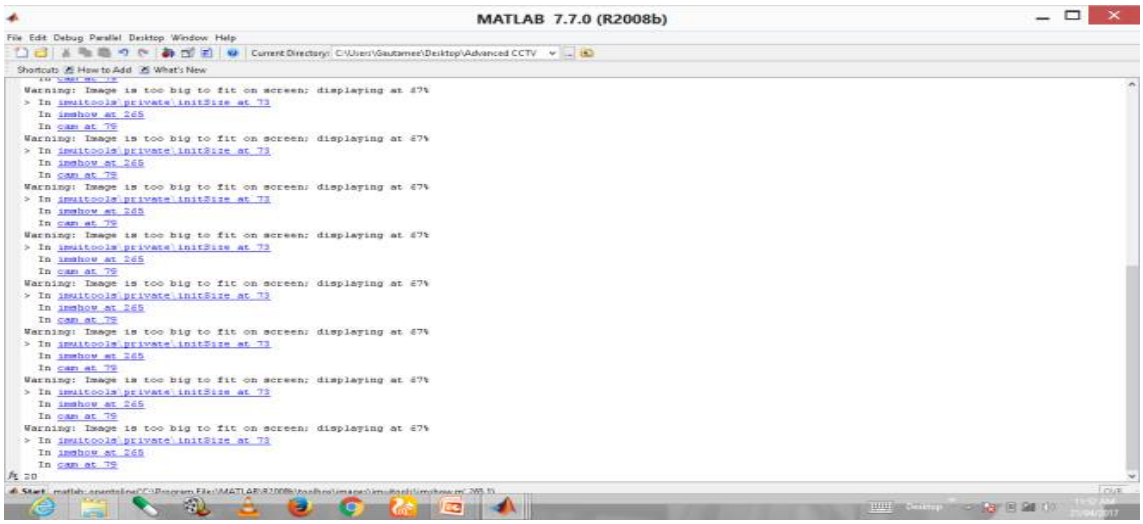


Variation Captured 2



Result Window

V. CONCLUSION

This advancement of CCTV camera & memory reduced the drawback of CCTV camera which is capturing all the necessary & unnecessary data. We can use this setup anywhere the CCTV required .as well as it can use in the transportation system, bio medical and in the defence .so it is useful.

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