ABSTRACT

Monitoring system using CCTV is important technology to support security and monitoring

system of a particular place from a distance. CCTV camera is mostly used in the retail industry

(mini markets, malls , department stores, etc.), apartments or offices.

CCTV camera plays a very important role as a proof of a crime . However, the use of

CCTV camera is sometimes ineffective and inefficient if placed in an empty room without any

activities and any movements at all. This may cause inefficiency in the memory of the CTV

camera.

Motion detection is applied and developed in the technology of CCTV camera to improve

recording effectiveness and efficiency in the CCTV camera. CCTV camera with motion detection

is able to detect any movements which are catched by the camera. The movements are then used

as a reference to start and end the recording process. If the CCTV camera is unable to detect

movements then the camera remains streaming without recording.

This thesis tries to develop an simulation or a software of which function is similar to the

CCTV camera. The CCTV camera simulation with motion detection gets inputs in a form of

video. If in the video there are movements exceeding the threshold value, the video is going to

be recorded. This simulation is influenced by the size of objects doing movements, the intensity

of light in a room being monitored and object changes in the monitored room.

There are three main processes in this system, i.e. movement detection process, process of

light intensity changes detection in a room and the process of object changes detection in the

background. This movement detection system is well proved with the accuracy rate from the

average trials about 96.9 % with a maximum observation of a 4-meter distance from the camera.

This condition is achieved when threshold = 1500 in binary image domain.

Key words: monitoring system, CCTV, motion detection, background subtraction.

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