

ABSTRACT

Today, the need for security systems has increased in various sectors such as banking, warehousing, offices, to residential use for the purpose of improving security and productivity. However, the current security system can only conduct surveillance, information about existing events can only be seen in place of surveillance, and the owner of the place can not know what happened, before viewing the recording. Therefore, it developed a science used for security systems. One example is the motion detection system. The motion detection system applied will provide information about every movement that occurs.

In this final project, IP camera will be used to supervise a room. Then, will be made a monitoring system based on windows application, so that can be done direct supervision without bound by space and time. In this application, will be applied motion detection algorithm and then, motion detection results will be saved and sent to cloud storage. Motion detection method used is background subtraction, where each frame will be compared with background or reference frame. Different pixels with background will be identified as moving objects. The steps used to detect motion, namely pre-processing, background modeling, frame differences, background subtraction, and image morphology.

The result of security system implementation in this final project has successfully detected movement on input video from IP camera and motion detection information has also been successfully saved to cloud storage user in real time. The results of motion detection performance test performed also resulted accuracy of 81.02%, TPR of 0.76, FPR of 0.00, and F1 score of 0.86.

Keywords : *Windows Application, IP Camera, Cloud Storage, Background Subtraction.*