

ABSTRACT

Lots of theft cases in Indonesia makes us feel anxious when we have to leave our house. Moreover it is very hard to entrust our house's safety to other people. That is why we need a reliable security surveillance system so we can prevent the thefts. So in this final project, designed a security surveillance system using video processing that will only capture the frames with a human object in it. Beside that, designed a notification feature based on Android so the house owner can know it real-time when there are human in their house.

Human detection was done by detecting motion first, with the method Background Subtraction. After that, detecting human with the method Histogram of Oriented Gradient (HOG). To make it more accurate, a PIR sensor was added as input. Captured output was saved in a server. This server was made by using PHP language. For notification service, an Android application was made that can access the server and displays those captured output.

Based on test results, the system works well and capture whole human body on 2 meter until 5 meter distance. Sensor reach 5.5 meter range. System accuracy for 3 meter distance is 74% and for 5 meter distance is 59%. Processing time ranged between 250 ms until 350 ms. Notification was 100% sent with average sending time 1.7 second.

Keyword : HOG, background subtraction, PIR, server, Android, video processing