ABSTRACT

Nowadays technological needs are increasing in various fields such as security, health, military and so on. Lack of security level leads to crime so a solution is needed to reduce the action. This action often occurs in a small path, place, room, agency or an important building. In this final project the scope is limited in the way or the hallway of a building that has lighting. The need for a technological monitoring system with a relatively better interface.

The method that can be used for technological road monitoring system based on image processing is with Background Subtraction algorithm and Haar Cascade method. Background Substraction Algorithm is used to separate objects between backgrounds so that the system can run the People Counter. Haar Cascade's method of detecting faces and customizing them with stored and customized databases if the faces of people detected will display the name information.

In this final project, a monitoring system is expected to be relatively better. This system will count the number of people passing in and out within camera range. The distance used is 50 cm, 100 cm, 150 cm and 200 cm and uses the division value of the Threshold area of 10, 250, 350 and 500. Results obtained from the analysis and testing that the optimum divisor value is 250. The system will also Recognize faces already stored in the database and display name information. In this section the maximum detectable distance is $\pm$ 100cm using the camera's maximum resolution of 1024x768 and has a 100% FPR value. In this system is monitored also the power usage by the system in 24 hours divided into 2 parts ie the first 12 hours and the second 12 hours with a period of 30 minutes. In the first 12 hours of 6:00 to 18:00 the average power used is 6.98 watts and at 12 hours both of 6.00-18.00 with an average of 7.01 watts.

Keywords: Background Subtraction, Haar Cascade, Tracking, Image Processing, Motion sensor, Crimes.