

## **ABSTRACT**

*These day, implementation of surveillance camera have been applied in many ways, surveillance camera had been a crucial tools to make sure the protection of people visually. In that case, theres's would be needed a system of surveillance camera that would make sure an optimally observasion of the observed object.*

*On this final project, we proposed a system of surveillance camera that can move according to the position of the observed object. Research is around how to build the system and what method that have to be implemented in the system itself. The method that had been choosen tho detect the moving object was running gaussian average and to predict the movement of the observed object we use extended kalman filter.*

*From testing the value of RGA parameters we found that value of 0.6 for alpha (learning rate) and 1 for threshold is the most optimal value for the system from all the value that had been tested. For EKF parameter we found that Q value (error covariance measurement) with value 0.1 to be implemented in the system. From computational testing we found that system with RGA is more "healthy" than system with SKDA, because SKDA system made the processor always in high utilization state. And last, from the system durabililty test of detection we found the system success rate is 74 % in various scenario that had been tested.*

*Keywords : Computer Vision, Background Subtraction, Raspberry Pi*