

## ABSTRACT

*The development of technology, resulting in increased mobility of urban and rural communities. Consciously or unconsciously, technological developments now make every work done by humans easy and fast. The existence of innovation that emerged in the present era, is expected to solve the problems that occur as a result of technological developments. Problems caused, among others, traffic congestion, public facilities that less adequate, security, environmental damage that arises as technology grows. This must be addressed quickly and efficiently.*

*The system that utilizes Raspberry Pi 3 microcontroller as a device to search for empty parking slots and equipped with a webcam to facilitate in monitoring the parking slots in buildings. In this case, the control of the parking slot uses two webcam cameras. This web camera aims to monitor the parking slots at different positions. Therefore, the parking slot will look intact and nobody gets caught but can not duplicate the slot during the data processing slot. After that, the image from the webcam that will be processed on Raspberry Pi 3 is analyzed by using the Gaussian Mixture Model Background Subtraction which group the objects in the picture.*

*Parking slots will be visible when the parking slots are empty. When using the haar cascade method, camera 1 can capture object in slot 1 by 42% and slot 2 by 86%. And if using Gaussian Mixture Model can not capture the object at all. When using the haar cascade method, camera 2 can capture objects in slot 3 by 60% and in slot 4 by 8% and if using Gaussian Mixture Model can not capture the object at all. In both cameras can not catch the car slot when using Gaussian Mixture Model method because the car is still. The method can capture the object if the object is in a state of motion*

**Keywords:** *Parking, Raspberry Pi 3, Gaussian Mixture Model Background Subtraction*