

## ABSTRACT

The process of calculating the number of people or commonly known as people counting is currently experiencing a very significant development in the world of computer vision. This research was conducted by designing a people detection and counting system based on CCTV camera and mini PC Raspberry Pi. The system process is carried out by reading image data and processing the image data through the image processing background subtraction method to be able to detect objects in the form of humans, and the virtual line crossing method to be able to track detected objects, so that they can calculate the number of humans entering or leaving a room automatically. In this study, a compounding system consisting of an image reading system and an image processing system have been carried out. The image reading system includes the process of reading digital image data using the RTSP (Real Time Streaming Protocol) system, the process of testing data transmission from the CCTV Camera in wired and wireless, and the ROI (Region of Interest) process of frame size frame size digital imagery. The image processing system includes an object detection system, and an automatic counting system of detected objects. The detection system can accurately detect human objects with 100% detection accuracy. The calculation system can automatically calculate objects detected by human objects accurately with 100% accuracy of calculations, when the human objects run alternately and have distances between humans. However, such detection and counting systems can still detect and count detected objects that are running other than humans.

**Keywords:** CCTV, People, Detection, Counting, Image Processing