Abstract

In rapid development of computer technology, CCTV functionality also evolves significantly. One of those additional functions is counting the number of people across the camera. This information can be used for surveillance system, for determining tourist number, for supermarket management, and many more. There are three steps being taken as the solution of the problem. The first step is Feature Extraction. All processes in this step are Image Sequences, Background Subtraction and Morphology Process. The second step is Head Detection. All the processes in this step are Dividing the group of people with Vertical Projection Algorithm and Detecting the people head with Body Feature Rectangle. The third step is Tracking and Counting. Camshift Algorithm combined with Lucas-Kanade Optical Flow Algorithm is the tracking method that used in this system. In addition, Line of Interest method is used for counting the number of people. Based on the combination of those methods, the system produces 100% accuracy for single person observation and produces accuracy change for group of people observation. Experiment shows that the result of average execution time for each frame is lower than the period of processing a frame so that this system can be implemented in real time application.

Keywords: *People counting*, *Head detection*, *Body Feature Rectangle*, *Camshift*, *Optical Flow*, *Line of Interest*