ABSTRACT

Technological developments lately more rapid impact on its application in everyday life. One technology that is currently being one of the rapidly growing field of computer vision. Computer vision is a work computer that aims to model and replicate the human view using software or hardware. The applications that being developed such as, the introduction of biometric hand gesture pose, face recognition, and human detection.

In this research will be discussed people counting using the histogram of oriented gradients and support vector machine method. The method used is quite good at detecting crowd. Shape and appearance of the object being detected by histogram of oriented gradient (HOG) it can be well characterized by the distribution of local intensity gradients or edge directions even without clearly known gradient center and edges, then support vector machine (SVM) has been proved to be better at detecting pedestrians to distinguish between two classes of human and non-human [15].

Then by using particle filters[2] for tracking , this method can handle lost on the detection of human detection using HOG and SVM in calculating the number of people. Particle filters known as a good method because it is easy in implementation , flexible , and systematic in handling the case of non - linear and non - gaussianity[21]. Although the original method of particle filters designed only to detect a single object[7] but in this research the method is combined with background subtraction to extract the foreground of an image and get a number of object, so it can produce tracking even if there is more than one object for each frame[10].

The application that have been created based on the method used in this research, produced different accuracy from different testing data. Accuracy produced by the vast majority of cases has reached the expected target on the hypothesis that above 85% and with an average execution time per frame resulting from the overall case for 133ms, but in some cases the accuracy decrease significantly, for example occlusion cases by 66.67%. It can be concluded that the system is less able to handle that case.

Keywords: people counting, HOG, SVM, *video processing*