

ABSTRACT

The implementation form of the human count is running a business, it is necessary to calculate customer traffic and with the COVID-19 pandemic entrepreneurs have to set a limit on the number of visitors. To detect human faces and calculate the number of humans, a system that can detect and count all areas of the image containing faces is needed. However, the problem that usually occurs is the large size of the file that affects the capacity of the recipient. Therefore we need a system that can reduce the size of the file without reducing the quality and information contained in the image. The purpose of this study is to implement a system of counting the number of people using the Viola-Jones method on the image resulting from Compressive Sensing, determine the parameters that produce the best performance and analyze the effect of Compressive Sensing on changes in accuracy, PSNR and compression ratio in the system.

The method used to detect faces in this study is the Viola-Jones method. The Viola-Jones method obtained an accuracy of 93.7%. However, the difficulty found in this method is to determine the face in an image where the position of the face must be perpendicular to the camera [1]. Viola-Jones is a method used to detect faces. There are 4 main components, namely Haar-like Features, Integral Image, AdaBoost and Cascade Classifier.

The results of research, using 10 sample images, for using Compressive Sensing get a PSNR value of 24.8 dB, compression ratio value is 81.1%, accuracy of 63.9% and for not using Compressive Sensing get an accuracy of 75%.

Keywords: People Counting, Compressive Sensing, Viola-Jones