ABSTRACT

Frame difference is a moving object detection method which is done by comparing the captured image frames according to the time sequence. By using this Frame Difference, a motion detection system in video can be made that can be applied in a system. Compressive sensing is a technique in the process of data sampling and data compression. The purpose of compressed data is to reduce the size of the data file but still maintain quality after the compression data reconstruction process.

In this final project, a car speed calculation system is designed on a compressed video using the compressive sensing method and then the speed is calculated using the frame difference motion detection method. The system that has been designed produces the output of car speed, PSNR and compression ratio. This system is designed with MATLAB programming application to run the system.

The data for the system in this Final Project is a video with different car speeds. The system performance parameters are PSNR, compression ratio and system accuracy. The system is tested with test variables in the form of changes in the threshold value and changes in the value of L (matrix size on compressive sensing). From the test results, the system with compressive sensing has obtained the best accuracy performance of 99.1% with a PSNR of 33.35 dB, while the average accuracy for the best system is 98.4% at a threshold of 25 to 35 for systems using compressive sensing and 25 to 35. 40 on systems without compressive sensing.

Keywords: *Car speed, Compressive Sensing, Frame Difference.*