

ABSTRACT

Face recognition is currently popular in a variety of applications, to simplify human work. Many ways and methods for processing face recognition that can be used, it's just that there are effective and not. This is because face recognition requires a lot of data so that the accuracy value is high, with a lot of data, a problem arises, which is inefficient in terms of heavy storage so that it affects the time required.

This Final Project proposes the CS-2FFT method based on feature extraction and K-NN classification to process the face recognition process. The process of using FFT is done twice, namely during the learning step and test step. The first stage of processing by taking data from 100 human faces from 10 individuals. After that there is feature extraction that is influenced by the CS-2FFT process, the final step is the classification stage to test the system. The purpose of this thesis is to obtain an effective method and classification used for face recognition.

The combination of the compressive sampling method with FFT is quite good. In this study, the best accuracy was obtained when the amount of data training 6 images without going through the reconstruction process was 92.5% with a computation time of 6.35 seconds per sample while for computing time the best results were obtained when testing with a total of 7 training data images and through the reconstruction process with an accuracy of 78% and a computational time of 6.03 seconds per sample.

Keywords: Compressive sampling (CS), Fast Fourier Transform (FFT), K-Nearest Neighbor (K-NN), Feature Extraction.