ABSTRACT

It is very vulnerable in the video recording is the appearance of the blurring effects. One common type of blur is Gaussian Blur due to camera lens which isn't focus when recording video. Because of this problem, there is an idea to make a final project which restores recorded video by elimating the blur effects.

To solve this case, Gaussian blur needs informations of Point Spread Function (PSF) to create a convolution matrix kernel and then executes a restoration effort on the video. This effort is known as deblurring. Deblurring is a form of deconvolution process. One of the deblurring techniques which is used to restore the blur effects is Wiener Filtering. Wiener Filtering reduces the differences between video's input and output. To get a better quality of video, the sharpening effort is done using Laplacian Operator. Laplacian Operator performs to sharpen video from deblurring result.

The testing of performance is required to calculate the value of Mean Square Error (MSE) and Peak Signal to Noise Ratio (PSNR). MSE and PSNR shows the quality of output video. The test shows that both Wiener Filtering and Laplacian Operator are able to restore a blurred video with varying degradation's grade. The value of MSE at the end of process ranged from 6-25 with PSNR ranged from 78-91 dB.

Keywords : *Gaussian Blur, PSF, Deblurring, Laplacian Operator, Wiener Filtering*