

ABSTRACT

In the current technological advances, not only information conveyed in the form of text but can also in other forms such as images. An image generated for displaying useful information. But in the process that generated the image may be images that have been degraded from the original object. What is needed is a way to display the image near the object / image originally, namely through the process of image restoration.

Restoration image (also called image deconvolution) is a process or method to display the original image back from a degraded observation. Degradation of color in the image, among others, can be a blur, scatter, glare and noise that cause the results become less good. In this final will be explained about the simulation and analysis of image restoration from blurred image using wavelet transform and Cellular Neural Network. There are several causes of blur on the image, among others, do not focus when shooting or movement of an object during image capture.

From this research has been carried out image blur restoration in order to resemble the original image. In this research, two-way of test objectively by using the MSE (Mean Square Error) and PSNR (Peak Signal to Noise Ratio), as well as a subjective test using MOS (Mean Opinion Score). Objectively, in haar wavelet the resulting MSE values between 1627,9010 to 3885,8467 and the resulting PSNR value reached 16,0145 dB. In daubechies2 wavelet the resulting MSE values between 1458,1416 to 3975,3299 and the resulting PSNR value reached 16,4928 dB. In symlets3 wavelet the resulting MSE values between 1541,3081 to 4562,6779 and the resulting PSNR value reached 16,2519 dB. While subjective, the value produced at an average of 3.5 or *fair* or enough.

Keywords : Image restoration, blurred image, wavelet transformation, Cellular Neural Network