ABSTRACT

Now many machines works like visual sensor. But their many lacking of the machine visual system compared to human visual system. In example in the image quality of the produced image that have a small resolution, or low color variation, far differ than human vision system that have perfected. Other lack that can happen in the kamera is the motion sensitivity. Camera have a little image capture speed so that if some object move under the capturing process will make a motion with the image result. Thus effect named image degradation. Other image degradation are blur and noise. Because of that degradated image must have some Image Restoration.

This Final Poject implementing a software developed by using Matlab 7.0.1 for Spatially Adaptive Image Restoration for the degradated image with Hopfield Network as a Neural Network Algorithm. This Methode use computational aproach to restoring the image. With this methode the image that have a degradation can be repaired to be more cleared.

Input for this digital image restoration is the degradated image and will be proceed to create the restoration image and computing error value for the restoration image with original image to compare. To compute restoration image error usiing PSNR (Peak Signal to Noise Ratio).

Result Image from Adaptive Hopfield Network produce performance value 8 dB greater than standar Hopfield Network Restoration and 15 dB greater than wiener restoration methode to restore the degradated blur image and additive gaussian noise with noise of variance 30.

Key Words : *Neural Network, Image Restoration, Adaptive Spasial, Image Degradation, blur, noise, motion, PSNR*