

Abstract

The main problem in image denoising using wavelet thresholding is how to obtain the effective threshold value. The Normalshrink usage to obtain this value can be accomplish the problem. But Normalshrink assumes that wavelet coefficients are independent each other. Bivariate Shrinkage With Local Variance Estimation usage keeps the dependent between wavelet coefficient so can improve the performance of image denoising. The performance of this method is influenced by window size in noised image's marginal variance measurement

In this Final Project, it has been analysed and implemented the used of Bivariate Shrinkage With Local Variance Estimation method for image denoising. Testing phase is toward to varying window size so the influences in denoising PSNR's result and computational time will be known. The noise which is used in testing phase are additive gaussian noise, additive laplacian noise and impulsive noise which is generated by noise generator.

From the experiment result, Bivariate Shrinkage With Local Variance Estimation method have better PSNR's denoising result about 0.01~0.5 dB toward to Bivariate Shrinkage and 0.05~1.5 dB toward to Normalshrink. Denoising computational time of this method is influenced by window size, bigger window size needs bigger denoising computational time.

Keywords : wavelet thresholding, image denoising, bivariate shrinkage, local variance estimation, window size.