

ABSTRACT

In today's digital technology is developing very quickly, the human need for technology continues to increase. One of the developing technologies is digital image processing technology, aiming to increase the resolution to get high resolution for image capture. This research will improve the image quality by using the VDSR (Very Deep Super-Resolution) convolution autoencoder method.

This final project will be made to improve the quality of digital images using the VDSR (Very Deep Super Resolution) method which is made in 20 layers. then VDSR control with VDSR AE 1 and 2 wherein the VDSR AE 1 and 2 models there is a layer reduction to 16 layers, added with encoding, decode, upsampling ,and max-pooling on the layer. The final result that can improve VDSR performance is by modifying the VDSR by adding a convolutional autoencoder, then analyzed to see a comprehensive comparison of the original VDSR method and the VDSR that has been modified by adding a convolutional autoencoder.

After that, an analysis of the second model will be carried out by comparing the results of the VDSR from the reference as an image in a better place, thus knowing a better method after testing. After modifying the VDSR convolutional autoencoder model. The results of the VDSR model are still superior to the VDSR AE 1 and VDSR AE 2. With the PSNR 37.53 AND ssim 0.9587 test results obtained from reference journals. However, the results of the VDSR AE 2 test got a better value than VDSR AE 1 with an average PSNR value of 11.89 and SSIM 0.2641 even though the values obtained were slightly different from VDSR AE.

Keyword : *image enhacement, convolution neural network, VDSR, autoencoder.*