

Abstract

Currently the digital image to be important and useful in many areas of life so that the needs of the digital image of the many and varied. Often the repair of damage to the digital image becomes very necessary result of the acquisition of used equipment limitations. Environment and tools are not ideal acquisition would result in damage to a *noise* in the resulting digital image.

In this thesis have been analyzed and implemented using Fuzzy Similarity Filtering methods and the incorporation method with Fuzzy Similarity *Boundary Resetting Boundary Noise Detection* . Filtering the *noise* reduction process on a digital image, so the image quality can be improved filtering results. *Noise* is included in the digital image is Impulse *noise* generated by a *noise* generator.

PSNR performance is tested (Peak Signal-to-Noise Ratio) in image filtering results. Fuzzy Similarity Filtering performance has managed to further improved by adding *Boundary Resetting Boundary Noise Detection* method as a method of detection *noise*. From the analysis it was found that in general the incorporation method and Fuzzy Similarity Filtering *Boundary Resetting Boundary Noise Detection* gives the average increase in *PSNR* value of 8.11075% to the probability of *noise* level ≤ 0.5 . The combined method also makes it easy for users to use because the user does not need to be setting the alpha value of the parameter Fuzzy Similarity Filtering *noise* due to the probability that an alpha value of ≤ 0.5 gives *PSNR* improvement of the biggest is the alpha 255.

Keywords: *alpha, digital image, noise, noise reduction, fuzzy similarity filtering, Boundary Resetting Boundary Noise Detection , PSNR.*