

ABSTRACT

Video is mobile image that eligible to sent message which is unexpressed by an image. Therefore, video quality being an important thing to do this duty. But, video is often annoyed by any factor where one of the factor is noise. Noise can cause some stain on the picture of video, so the information in the video can not be extended well.

This final task have been implemented and analyzed the fuzzy method collaborated with sharpening for video quality enhancement by reduce noise in the video. This enhancement using additive Gaussian noise and additive Laplacian noise where the noise is generated by noise generator.

Objective performance parameters which is tested to the video are MSE (Mean Square Error) and PSNR (Peak Signal Noise Ratio). While subjective performance parameter is MOS (Mean Opinion Score) that was taken to 30th respondent.

To get a greatest video from the enhancement, then it is comparing five collaborated method, that is fuzzy method enhancement (without sharpening), fuzzy method followed by sharpening with four direction of detection, fuzzy method followed by sharpening with eight direction of detection, fuzzy method joined with sharpening by four direction of detection, fuzzy method joined with sharpening by eight direction of detection. From all of enhancement collaboration method, can be concluded that the fuzzy method joined with sharpening by four direction of detection have the best video output with the decrease of MSE value about 68.21% for first iteration. For every iteration, the decrease of MSE value is about 6.35% while the increase of PSNR value is 6.025%. Besides, the increase of MOS value is about 5.06%.

Key word: *Fuzzy Filtering, Fuzzy Smoothing, Sharpening, Noise, Fuzzy derivatives, Fuzzy rules, MSE, PSNR, MOS*