# PEMBESARAN CITRA DIGITAL BERWARNA MENGGUNAKAN MODIFIKASI ALGORITMA *NEW EDGE DIRECTED INTERPOLATION*

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## Abstract

*Interpolation has used as a method for digital image magnifying. When digital image magnified, that image gets increasing in its total pixel. The new pixels which appear when digital image magnified don't have any value. A method which can be used to give a value for this new pixel is interpolation. Interpolation can estimate a value for those new pixel based on pixels around them which have value.*

*Many interpolation algorithm have used. One of them is New Edge Directed Interpolation which has founded by Xin Li and Michael Orchard in 2001. This algorithm more populer known as NEDI. The former experiment with NEDI was done by its founder in magnifying grayscale image with NEDI.*

*In this research, a modification of NEDI used for digital color image magnifiying. Modification is done to solve the problem lack of ability of NEDI to produce a interpolation value when singular matrix formed. When singular matrix formed, inverse matrix which is a part from calculation NEDI, can not be done. Modification is done by using bilinear interpolation to produce a interpolation value.*

*In addition, the application will be made used for evaluate digital image which resulted by this application. Through this experiment, can be known the effectiveness modification of NEDI in magnify digital color image.*

*Results in this experiment are digital color image magnified using modification NEDI can be done by applying this algorithm for each color channel (Red, Green, and Blue), the resulted image depends on amount neighbor which used. The more total neighbor used the better result can be obtained. The resulted image also depends on the number of pixels which have big differences value with the other neighbor pixel. More the number of pixel which have big differences value with the other neighbor pixel which had by a digital image more worst the resulted image can be obtained.*

*Keywords*: NEDI, Image Magnifying, Edge Directed Interpolation