

Numerical Calculation HW2

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1 1D Image Zooming With Lagrange Interpolation

Matlab implementation of this algorithm is attached. In numerical analysis, Lagrange polynomials are used for polynomial interpolation. For a given set of points with no two values equal, the Lagrange polynomial is the polynomial of lowest degree that assumes at each value the corresponding value.

The program gets zoom level and the number of effective adjacencies from input. Then using **imread** function it turns a picture into a matrix. After that the image gets stretch by putting zeroes between columns of image data. Finally using **Lagrange** interpolation it turns those zeroes into approximations of the adjacent pixels.

Input :

$$zoom - level : 2, 4, adjacency : 2, 4 \quad (1)$$

Output :

The output images are in the folder