

Zero-Order Hold Interpolation Exercise

Topic: Zero-order hold interpolation is an image interpolation method that can be used to increase the dimensions of an image. It takes a $n_1 \times n_2$ image and transforms it into a $en_1 \times en_2$ one, where e is an enlarge factor. This is achieved with the formula:

$$f_e(n_1, n_2) = f\left(\left\lceil \frac{n_1}{e} \right\rceil, \left\lceil \frac{n_2}{e} \right\rceil\right).$$

Exercise: Create a Python script file and perform the following tasks:

- Import OpenCV and NumPy libraries.
- Create a function that takes as input an image and an enlarge factor and performs zero-order hold interpolation. Then, return the resized image. You can add any extra parameters you desire.
- Read an image.
- Apply zero-order hold interpolation to the image.
- Finally, display the resized image.