

RO-1.0X

Assignment 5

Morphological Image Smoothing

Problem Statement:

- **Given files are**

- “assignment_5.jpg”
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- **Tasks**

- Implement Erosion from scratch.
 - Implement Dilation from scratch.
 - Implement Closing and Opening.
 - Apply Morphological Smoothing.
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- **To Submit**

- “binary_img.jpg” , “threshold_method.txt”

- Here is a link to use for thresholding image to binary : [Link](#)

- “morphological_image_smoothing.py”, “main.py”

- Create a class based implementation in “*morphological_image_smoothing.py*” and call each operation in “*main.py*”.

- “structuring_element.txt”

- “erosion_s.jpg”, “erosion_cv.jpg”

- “*erosion_s.jpg*” is the result obtained from scratch implementation,
- “*erosion_cv.jpg*” is the result obtained from OpenCV function.

- “dilation_s.jpg”, “dilation_cv.jpg”

- “*dilation_s.jpg*” is the result obtained from scratch implementation,
- “*dilation_cv.jpg*” is the result obtained from OpenCV function.

- “opening_s.jpg”, “opening_cv.jpg” and “closing_s.jpg”, “closing_cv.jpg”

- “*opening_s.jpg*” and “*closing_s.jpg*” is the result obtained from scratch implementation,
- “*opening_cv.jpg*” and “*closing_cv.jpg*” is the result obtained from OpenCV function.

- “morph_s.jpg”, “morph_cv.jpg”

- “*morph_s.jpg*” is the result obtained from scratch implementation,
- “*morph_cv.jpg*” is the result obtained from OpenCV function.

- *Observe the results from OpenCV function and your own implementation, as in upcoming assignments you’ll have to use OpenCV functions.*

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- To submit the assignment put both the files in a folder named **username**, where **username** is your user name with which you signed up at DeepEigen.
 - Submit **username.zip** file