

Assignment 2

Due 7/20/2018

The objective of this assignment is for you to become familiar with the basic image operations. Select your choice of image processing environment: MATLAB or OpenCV.

1. Medial Axis (33.3%)

Use the two provided images to calculate their skeleton. Use the grassfire transform to calculate the points that are equidistant from the boundaries. Discuss the robustness to noise.

2. Two Image Operations (33.3%)

Select two images and perform addition and subtraction for a specific task (as discussed in class). Motivate the choice of images and the operation. Experiment with adding a smaller image (embedded into an image of the same size) into a bigger image. Discuss your choice of images and operations in the report.

3. Image Multiplication (Grad Credit)

Multiply two images (pixel wise). As in Q2 motivate the selection. Experiment with operating only on one color channel. Discuss your choice of images and operations in the report.

4. Correlation(33.3%)

Obtain two images from two different angles. Extract an object from the second image and use it as a template. Implement the correlation operation. Using the correlation operation try to locate the object in the first image.

What to Submit

Please together with your code provide a report discussing your implementation together with some illustrative examples (screen shots). The report will be the primary product of this assignment. Ensure that it is well written and formatted. Document your work in images and use captions to describe what each image displays. Use of LaTeX is encouraged.