

Computer Vision 1: Assignment 1 (Addendum)

Task 2: Computing surround-center contrasts using integral images (programming)

There is a mistake in the assignment PDF. In short, the example result shown in the assignment PDF (Figure 1, right) is computed using the *sums* of image regions, not the *averages*.

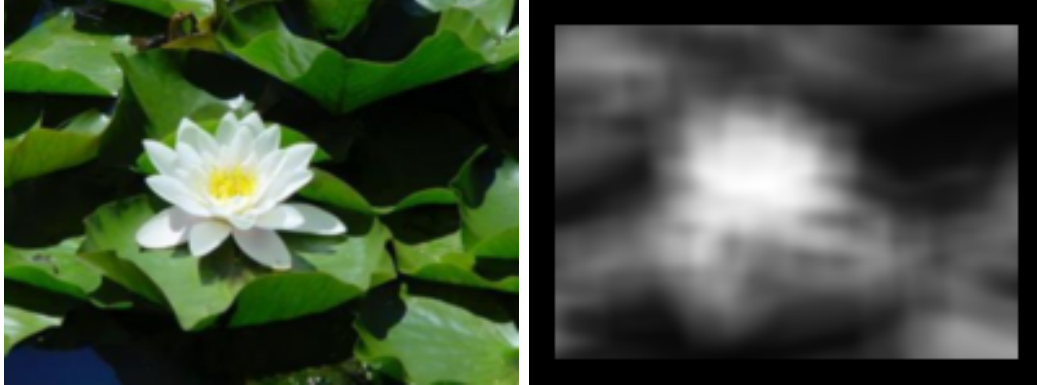


Figure 1: An image (left) and its surround-center contrast map (right) using *sums*.

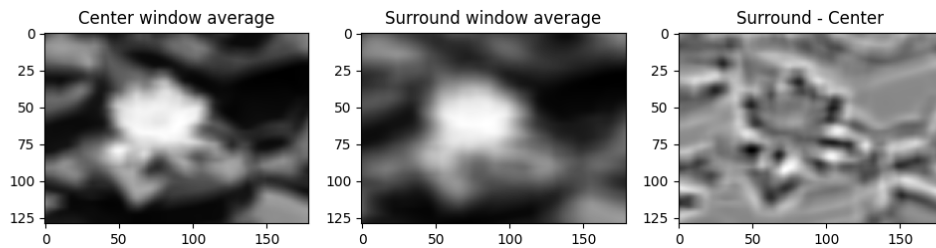


Figure 2: Using averages instead of sums. From left to right: center window averages, surround window averages, the surround-center contrast map obtained by subtracting the center values from the surround values.

The result of `integrate` is the *sum* of the requested image region. Let us call this result area sum value by r . Now, if the image region has a size of N pixels, the *average* of the requested image region is $\frac{r}{N}$. The mistake in the assignment PDF is using r instead of $\frac{r}{N}$, which means the result will look different. If you use the window sizes given in the assignment sheet, and use the average as requested instead of the sum, your result will look like that shown in Figure 2.

If you want, you can tune the window sizes to better highlight the flower even with the average method, but this is not required. You may submit your solution using either method, average or sum, and it will be accepted.