

CS 483 Final Project Report

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1 Methods

To find the contours of the Planaria, I used a copy of the image to apply a bilateral filter or blur (for reducing noise) and converted the copy to gray-scale. Then I created a structuring element as a kernel to create morphological closing and opening transformations on the copy of the image. This was done to reduce more of the noise in the image that was not removed via the blur. After that I applied an adaptive threshold that incorporated a Gaussian and bilateral filter. I used the Canny edge detection to confirm what parts the contour would detect and applied the find contours on the edges.

2 Findings

I found that I was able to detect the contour of the Planaria. However, there are complications due to the way multiple images had Planaria in different forms or there were multiple Planaria. Since I could not use the SIFT or SURF functions from OpenCV, I instead used a Brute Force matching algorithm. In the results of these findings I was unable to find a significant match, although it was able to match a portion of the Planaria's head.