

ComS 401: Projects in Computing

Lab Assignment #3

Due: Fri. Sep 15, 2006

Submission format: web page with code and images.

1. Basic Mathematical Morphology

(A) In this problem you are asked to replicate one of the results given in the “Mathematical Morphology” paper by Haralick and Shapiro (i.e., Chapter 5 in “Computer and Robot Vision”, Addison-Wesley, 1993). Using the morphological operators provided by matlab write a short program that reads the image of the pendulum and separates it into its two basic components: disk and handle. Post your matlab code, your original image and your two resulting images on the web page. The original grayscale image will be provided.

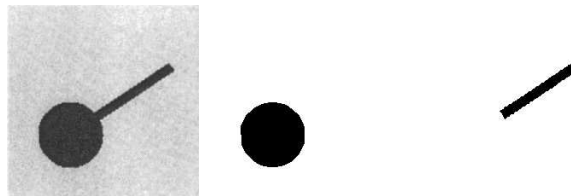


Figure 1: **Left:** original Image; **Center:** segmented disk; **Right:** segmented handle.

2. More Morphology

In this problem you are asked to replicate another result given in the “Mathematical Morphology” paper by Haralick and Shapiro (i.e., Chapter 5 in “Computer and Robot Vision”, Addison-Wesley, 1993). The goal is to start with the original image of the chip and to identify the positions of its 14 pins. The figure below shows some of the partial results which we were able to obtain (i.e., we know for sure that this problem is doable even though we started with the scanned image of the chip and not with the original image used by Haralick and Shapiro which we don’t have).

Once again, post your code and all intermediary images on your web page.

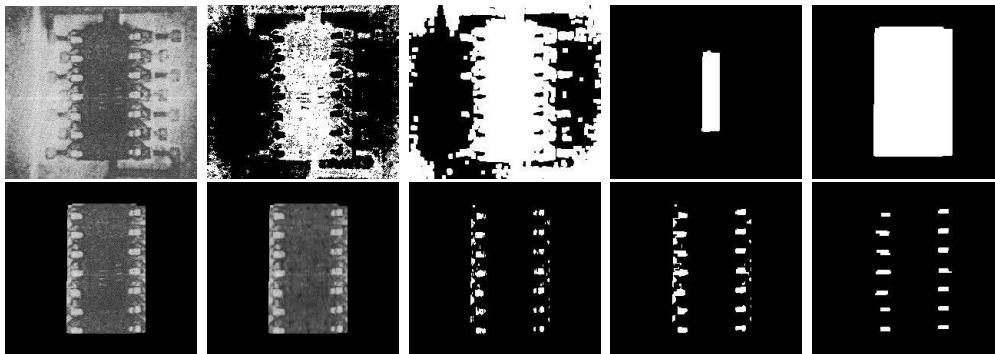


Figure 2: Segmenting the 14 pins of the chip. For more details see Chapter 5 in Haralick and Shapiro’s book.