

Automatic thresholding is a great way to extract useful information encoded into pixels while minimizing background noise. This is accomplished by utilizing a feedback loop to optimize the threshold value before converting the original grayscale image to binary. The idea is to separate the image into two parts; the background and foreground

Simple Automatic Thresholding Algorithm

1. Select initial threshold value, typically the mean 8-bit value of the original image.
2. Divide the original image into two portions;
 1. Pixel values that are less than or equal to the threshold; background
 2. Pixel values greater than the threshold; foreground
3. Find the average mean values of the two new images
4. Calculate the new threshold by averaging the two means.
5. If the difference between the previous threshold value and the new threshold value are below a specified limit, you are finished. Otherwise apply the new threshold to the original image keep trying.