

## HOMEWORK – 11

**Approach:**

I have used the supervised learning concept that we have used earlier for Raspberries homework. Here I am considering white table as background, green skin and flesh as foreground. Then I have calculated the mahalanobis distance for each of them. Then I have used the mahalanobis distance calculated to segment the skin part from the image using,

**Code:**

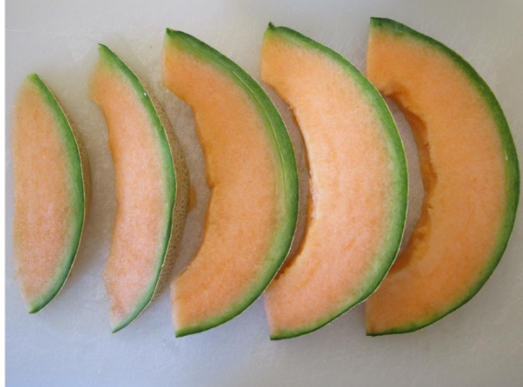
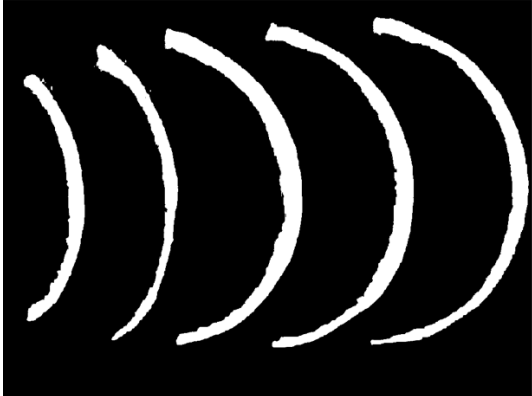
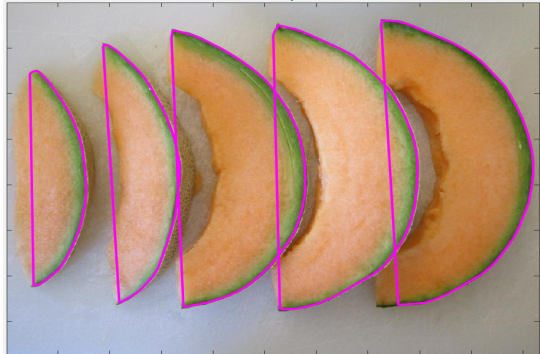
```
MahalanobisDistanceForForeground > MahalanobisDistanceForForegroundSkin &
MahalanobisDistanceForBackgroundWhiteBoard > MahalanobisDistanceForForegroundSkin;
```

Then I have applied the concepts of morphography to get correct answer. I have applied a dilation operation with disk structuring element to remove the noise. After that I have passed this image (black and white) to the bwconncomp(BW) to find the number of connected components. This will give me the count of slices in the image.

There is one problem with this, based on my observation I have found that we need enough number of points for supervised learning to get the correct answer. The reason we need more points because the change in color is gradual between flash and skin. Color changes from light orange to light green then dark green.

I tried using polyfit function to draw the magenta line but I am not able to use it correctly. So, I have used regionprops that we have used in dice homework. It helped me finding the x and y coordinates of the polygon to plot

**Output:**

 <p>Original image</p>	 <p>Output from supervised learning</p>
 <p>Magenta line across the skin to be removed from flesh</p>	<pre>&gt; In defaulterrorcallback (line 12)   In ginput (line 65)   In HW11 Jain Yash Warning: Error updating Text.  Character vector must have valid interpreter syntax: Click on white board (background region).. Hit return to end...\n  &gt; In defaulterrorcallback (line 12)   In ginput (line 65)   In HW11 Jain Yash Number of melons in image = 5 .. Output showing number of melon slices</pre>

