**Aim: Performing/Implementing image segmentation**

% Read an image

originalImage = imread('one.jpeg'); % Replace 'example.jpg' with your image file

% Display the original image

subplot(2, 3, 1);

imshow(originalImage);

title('Original Image');

% Convert the image to double precision for k-means

imageData = double(originalImage);

% Reshape the image data into a 2D matrix

[m, n, ~] = size(imageData);

imageData = reshape(imageData, m \* n, 3);

% Perform k-means clustering (adjust the number of clusters as needed)

numClusters = 4; % Change the number of clusters as per your requirement

[clusterIndices, clusterCenters] = kmeans(imageData, numClusters);

% Reshape the clusterIndices back to the original image size

segmented = reshape(clusterIndices, m, n);

% Display the segmented image

subplot(2, 3, 2);

imshow(segmented, []);

title('Segmented Image');

% Create a mask for each segment

segmentMasks = cell(numClusters, 1);

for i = 1:numClusters

mask = (segmented == i);

segmentMasks{i} = mask;

end

% Display each segmented region

for i = 1:numClusters

subplot(2, 3, i + 2); % Adjusted the subplot index

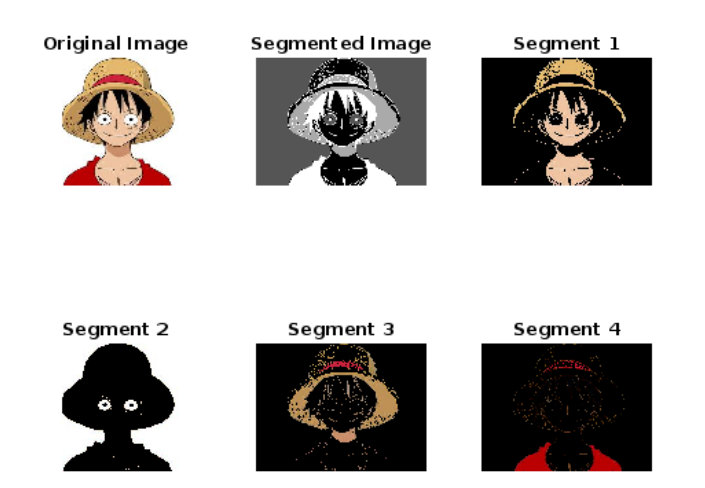
segmentedRegion = originalImage;

segmentedRegion(repmat(~segmentMasks{i}, [1, 1, 3])) = 0;

imshow(segmentedRegion);

title(['Segment ', num2str(i)]);

end

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