experiments

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For this assignment, i will implement a version of the salient object detection technique. It’s region-based, and the color information can be used.

Step1-1

(1) First, the input color image is represented by m \* n \* 3 matrix, m is the width of the input image, n is the height of the input image.

(2) quantitizing each color channel (RGB) to reduce the number of colors (such as from 256 to 16),then use a number (1 to 4096) instead of (R, G, B) values to represent a color uniquely.

(3) capturing the map and it’s size(m,n) using the function of imread() and size(); secondly, splitting the map into three channel: R, G, B and express them in single forms; then quantitizing each channel by 16; lastly, representing each pixel using 16xfrom zero to 4095.

Tep1-2

using vlfeat toolbox to produce superpixels: segments

First, translate the type of tne map( lab\single) and set the parameters: regionSize = 30, regularizer = 1; then use the function of slic produce the superpixels: segments 300\*400

Step2

compute features of each superpixel：counting number of pixels for each color and store it in histogram’s bins.

First，showing the size of segments. Then, establishing new matrix where the size must be big enough storing the feature of each superpixel. Lastly, using double circulation seek the number of same feature in one label, then thy can be stored in a matrix h1, in tne end which can produce 192 histogram.

Step3

Compute superpixel feature contrast

As the formula shows, we can compute the distance of different histogram. Each hi can compute the times of segments-1.we make a double circulation to compute them which realize the global histogram.

Step4

Convert superpixel saliency to pixel saliency

Assign all the pixels of the same superpixel the same saliency value.

Step5

Use priors to enhance the result

Using center priors enhancing the result to get the final saliency map.