Lab3B-Color Histogram Based Image Retrieval

CIS694/EEC693 Image Processing and Learning Methods-2021 Spring

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In this in-class lab, we will practice the Color Histogram based Image Retrieval. You have an image named “interest.png”, and the image retrieval task is to search the top-*K* most similar images in the database, which might contain thousands of images.

To make it simple, suppose all the images in the database folder is PNG format. Write a Matlab code to implement the following image retrieval algorithm.

**Color Histogram based Image Retrieval Algorithm**

**Input: *Nr*, *Nc* for image resizing, *K*=3**

**1. Resize the interest image to be [*Nr*, *Nc*] and compute the color histogram *h* for the resized interest image.**

**2. FOR each image *Ii* in the database:**

**3. Resize *Ii* to be [*Nr*, *Nc*] and compute its color histogram *hi***

**4. Compute the *L2* distance between *h* and *hi***

**5. Keep saving the corresponding *L2*distance to a vector named *R***

**6. End FOR**

**7. Sort the vector *R***

**8. Visualize the retrieved top-*K* results**

Brainstorm: Think about how to compute the color histogram for a RGB color image.