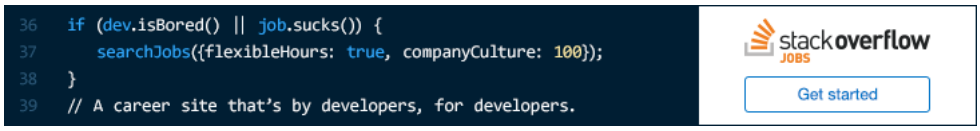
x Dismiss

Join the Stack Overflow Community

Stack Overflow is a community of 7.2 million programmers, just like you, helping each other. Join them; it only takes a minute:

Sign up

compare histograms of grayscale images in opencv



hi can anyone provide me with a simple open cv program to load two RGB images, convert it to Gray scale, calculate histogram and then compare their histograms. I saw a similar program done in the open cv site but they used HSV instead of Gray scale and it was a c++ program. I can look up the flow and everything...I don't know which functions to use and what their arguments will mean.... Regards, Kiran

c opencv histogram

asked Apr 2 '13 at 18:24

user2236862
10 1 2

What do you mean by "compare histograms"? – brotherofken Apr 2 '13 at 20:09

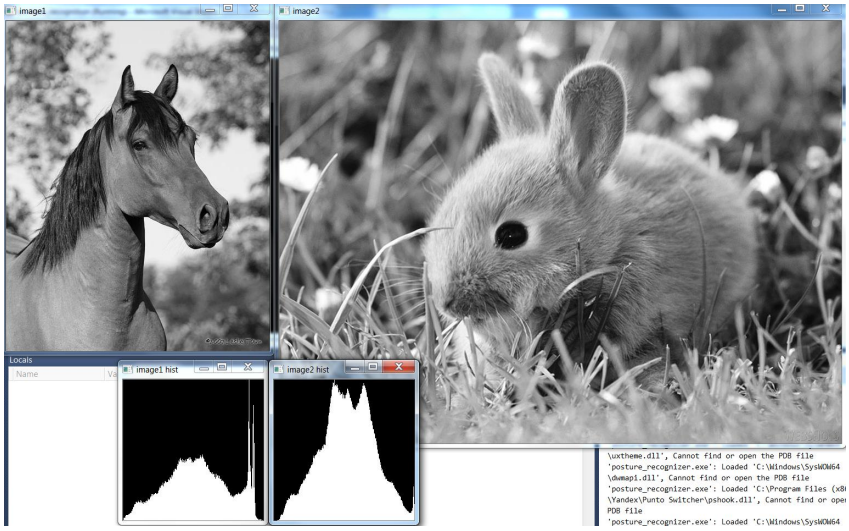
2 Answers

Here is the simple code snippet that does the thing. Since you not told how you want to compare histograms, I suggest to do it visually.

```
#include <opencv2/opencv.hpp>

void show_histogram(std::string const& name, cv::Mat1b const& image)
{
    // Set histogram bins count
    int bins = 256;
    int histSize[] = {bins};
    // Set ranges for histogram bins
    float lranges[] = {0, 256};
    const float* ranges[] = {lranges};
    // create matrix for histogram
    cv::Mat hist;
    int channels[] = {0};

    // create matrix for histogram visualization
    int const hist_height = 256;
    cv::Mat3b hist_image = cv::Mat3b::zeros(hist_height, bins);

    cv::calcHist(&image, 1, channels, cv::Mat(), hist, 1, histSize, ranges, true,
false);

    double max_val=0;
    minMaxLoc(hist, 0, &max_val);

    // visualize each bin
    for(int b = 0; b < bins; b++) {
        float const binVal = hist.at<float>(b);
        int   const height = cvRound(binVal*hist_height/max_val);
        cv::line
            ( hist_image
            , cv::Point(b, hist_height-height), cv::Point(b, hist_height)
            , cv::Scalar::all(255)
            );
    }
    cv::imshow(name, hist_image);
}

int main (int argc, const char* argv[])
{
    // here you can use cv::IMREAD_GRAYSCALE to load grayscale image, see image2
    cv::Mat3b const image1 = cv::imread("C:\\workspace\\horse.png",
cv::IMREAD_COLOR);
    cv::Mat1b image1_gray;
```

```
    cv::cvtColor(image1, image1_gray, cv::COLOR_BGR2GRAY);
    cv::imshow("image1", image1_gray);
    show_histogram("image1 hist", image1_gray);

    cv::Mat1b const image2 = cv::imread("C:\\workspace\\bunny.jpg",
cv::IMREAD_GRAYSCALE);
    cv::imshow("image2", image2);
    show_histogram("image2 hist", image2);

    cv::waitKey();
    return 0;
}
```

Result:

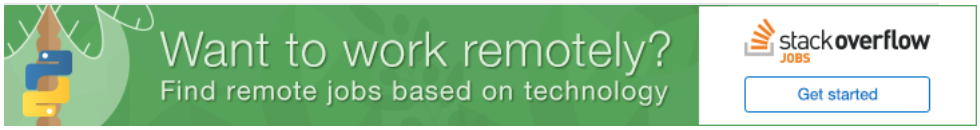


answered Apr 2 '13 at 20:32

brotherofken
1,022 1 8 21

thanks a lot buddy...sorry if I was vague but you gave me just what I was looking for..thanks again. – user2236862 Apr 21 '13 at 18:42

2 Accept the answer, please. Thank you. – brotherofken Apr 21 '13 at 20:15



To compare histograms you can look at the last four points from this http://docs.opencv.org/doc/tutorials/imgproc/histograms/histogram_comparison/histogram_comparison.html.

answered Aug 19 '13 at 9:20

rashii
284 5 17