OPENCV

RIGHT FROM MY UNDERGRAD DAYS, I AM VERY FOND OF IMAGE PROCESSING(IP). BUT ALL THESE YEARS, I HAVE BEEN USING MATLAB TO STUDY/ANALYZE THE TECHNIQUES IN IP. LATELY, I HAVE BEEN INVOLVED IN DEVELOPING APPLICATIONS/LIBRARIES IN C++ @ MY WORK PLACE. SO, I THOUGHT IF I START WORKING ON OPEN SOURCE IP-APIS LIKE OPENCV, IT WILL HELP MY CODING SKILLS IN C++. I PROMISE YOU, I WILL REGULARLY UPDATE THIS BLOG WITH WHAT I STUDY/LEARN IN OPENCV AND IMAGE PROCESSING.

THURSDAY, APRIL 29, 2010

Getting Histogram for a given grayscale image

What is Histogram?

Graphical representation of frequency density of image pixel values. Its helpful in identifying the pixel distribution in an image.

Program:

```
 /*
 * File:   main.cpp
 * Author: Karthick
 * Created on April 2, 2010, 11:52 AM
 */


#include < cv.h >
#include < highgui.h >

using namespace std;

IplImage* image = 0;
IplImage* imgHistogram = 0;
IplImage* gray = 0;
CvHistogram* hist;


int main(int argc, char** argv) {


    if (argc != 2 || !(image = cvLoadImage(argv[1])))
        return -1;

    //size of the histogram -1D histogram
    int bins = 256;
    int hsize[] = {bins};
    //max and min value of the histogram
    float max_value = 0, min_value = 0;
    //value and normalized value
    float value;
```


ABOUT ME

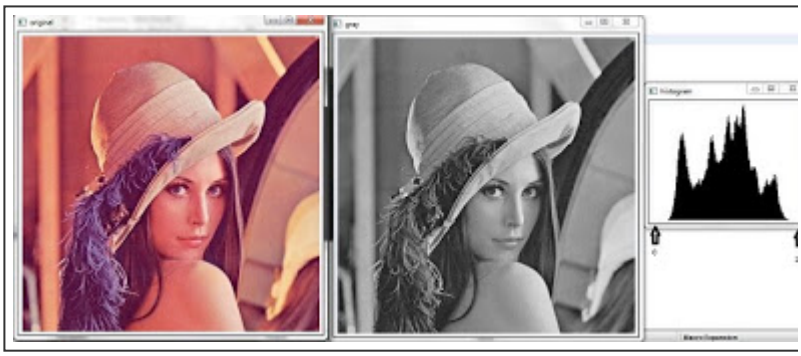
KARTHICK-SHARE

I am a software Engineer with good C++/C# coding skills.

VIEW MY COMPLETE PROFILE

```
    int normalized;
    //ranges - grayscale 0 to 256
    float xranges[] = {0, 256};
    float* ranges[] = {xranges};


    //create an 8 bit single channel image to hold a
    //grayscale version of the original picture
    gray = cvCreateImage(cvGetSize(image), 8, 1);
    cvCvtColor(image, gray, CV_BGR2GRAY);


    //Create 3 windows to show the results
    cvNamedWindow("original", 1);
    cvNamedWindow("gray", 1);
    cvNamedWindow("histogram", 1);


    //planes to obtain the histogram, in this case just one
    IplImage * planes[] = {gray};
    //get the histogram and some info about it
    hist = cvCreateHist(1, hsize, CV_HIST_ARRAY, ranges, 1);
    cvCalcHist(planes, hist, 0, NULL);

    cvGetMinMaxHistValue(hist, &min_value, &max_value);
    printf("min: %f, max: %f\n", min_value, max_value);


    //create an 8 bits single channel image to hold the histogram
    //paint it white
    imgHistogram = cvCreateImage(cvSize(bins, 200), 8, 1);
    cvRectangle(imgHistogram, cvPoint(0, 0), cvPoint(256, 200),
CV_RGB(255, 255, 255), -1);
    //draw the histogram
    for (int i = 0; i < bins; i++) {
        value = cvQueryHistValue_1D(hist, i);
        normalized = cvRound(value * 200 / max_value);
        cvLine(imgHistogram, cvPoint(i, 200), cvPoint(i, 200 -
normalized), CV_RGB(0, 0, 0));
        printf("%d\n", normalized);
    }


    //show the image results
    cvShowImage("original", image);
    cvShowImage("gray", gray);
    cvShowImage("histogram", imgHistogram);
    cvWaitKey();
    return (EXIT_SUCCESS);
}
```

Output:



POSTED BY KARTHICK-SHARE AT 8:15 PM

2 COMMENTS:

Mclovin May 10, 2012 at 1:05 PM

Ellam nalla dhaan iruku but change the backgroun. eyes paining.

Reply

Peace December 3, 2012 at 6:50 AM

Hello there?. I am working on opencv histogram. I cannot realize how to change pixel value using histogram bins. Can you help me?

Reply

Give ur thoughts!

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