

Re: Rookie having problems with some filter code. Any help?

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Source: <http://sci.tech-archive.net/Archive/sci.image.processing/2005-12/msg00057.html>

- *From:* jg.campbell.ng@xxxxxxxxxx
 - *Date:* 13 Dec 2005 11:44:49 -0800
-

Don Bruder wrote:

- > Hi folks.
- > As the subject line says, I'm a rookie when it comes to image
- > processing. I've stumbled onto a few resources online, most notably
- > Frederic Patin's paper titled "An Introduction to Digital Image
- > Processing" (available at
- > <http://www.gamedev.net/reference/programming/features/imageproc/>) as of
- > the time I write this), and that's given me a lot of the background info
- > I need to hack together some basic image-handling routines, but I'm
- > having troubles with the results coming out of them – Quite possibly due
- > to the fact that I'm such a total greenhorn when it comes to writing
- > code to do digital image processing.
- >
- > I'm not sure if the problems I'm having stem from me being so green at
- > the subject, one or more errors in Frederic's paper and/or example code,
- > artifacts of converting his code (originally written to target Windows
- > by way of a library called "Allegro 4.0") so it can run on a Macintosh,
- > my improperly "replacing" some of the Allegro routines with Mac-centric
- > versions, a combination of all these factors, or something completely
- > off the wall, but whatever the cause, it's clear to anyone taking even
- > the most casual glance at the results that my code is failing miserably.
- >
- > The code in question (commented to the point of ridiculousness for this
- > post, since I haven't got a clue who might read it and wonder what on
- > earth it's trying to do) as well as a "raw" image and the results of
- > shoving that image through my attempt at a matrix-convolution based
- > sharpness filter, plus a link to Frederic's paper, can be seen here:
- > <http://www.sonic.net/~dakidd/Filterproblems.html>
- >
- > If any of you have any suggestions for me as to how/why things are going
- > bad, and/or how to fix them, I'd be thrilled to death to hear from you,
- > either here on the group, or via email. (Just pay attention to my
- > anti-spam measures, as noted in my .sig, if you try to relpy to me via
- > email.)
- >
- > I'd also welcome any pointers to more and/or better info on coding
- > digital image processing stuff, if anyone would care to point me in the

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> right direction. (Please... Spare me the "google it" – I've been wearing
> out my eyeballs trying to figure out what is and isn't relevant in the
> literally millions of results google hands me)
>
> At this point, I just plain don't care how slow/inefficient/etc the code
> I'm working with may be – I can worry about optimizing it later – AFTER
> I've gotten it to the point where it's properly functional. I'm
> currently MUCH more interested in getting basic correct functionality
> out of it than any attempt at making it "the fastest, bestest, greatest
> filter ever written".
>
> Thanks in advance for any assistance you might be able to provide!

There's a lot more there than image processing.

1. For a start change

```
int sharpen_filter[sharp_w][sharp_h]={
{ 0,-1, 0},
{-1, 5,-1},
{ 0,-1, 0}
};
```

to

```
int sharpen_filter[sharp_w][sharp_h]={
{ 0,0, 0},
{0, 1,0},
{ 0,0, 0}
};
```

and you the output and input should be identical.

2. Print some numbers (a few, a very few) of in and out -- print the first ten pixels of input and output of the tenth line in the image and let us see that.

3. Just guessing, you are extracting 8-bit rs, gs and bs from the Color pixel? And then constructing a Color pixel from the filtered result?

What is $0*0 - 1*0 + 0*0 - 1*0 + 5* 200 - 1*0, \dots$? Does it fit into eight bits? If that is the case, I don't think 'Normalizer' is of much assistance; it should be 1; incidentally, did you ever initialise it before the summation?

Unless you know what you are doing, do image calculations in float or double and *then* normalise and convert back to whatever.

Best regards,

Jon C.

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- *Follow-Ups:*

- ◆ *Re: Rookie having problems with some filter code. Any help?*

- ◆ *From:* Don Bruder

- *References:*

- ◆ *Rookie having problems with some filter code. Any help?*

- ◆ *From:* Don Bruder

- Prev by Date: *Luminance and RGB layers question*

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