Subject: Is it possible to rotate a flipped image with cgImage?
Posted by atmospheric physics on Wed, 25 Jun 2014 11:56:38 GMT
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Hello,

I have a .JPG image, which requires flipping over the top-down axis before rotating the image by 60 degrees (clockwise counting).

I now read the JPG image file as below and place:

```
READ_JPEG,ImgFile.JPG,img,/ORDER
; Flipping the image
flipHorImg = REVERSE(img,1)
; Rotate the flipped image by 60 deg clockwise direction
rotImg = ROT(flipHorImg,60,0.8,/INTERP)
cgImage,rotImg,Position=pos2,/OVERPLOT
```

I get an error like this ...
% POLY_2D: Expression must be an array in this context: I.

I don't see a problem with flipping of the image, but there is actually a problem with rotated image. While I know that with cgImage, I can use the keyword /NEGATIVE for flipping the image but there is no option for rotating the flipped image. Anyone with a solution and an example will be of great help.

Subject: Re: Is it possible to rotate a flipped image with cgImage?
Posted by Matthew Argall on Wed, 25 Jun 2014 12:45:02 GMT
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> I get an error like this ...
>
> % POLY_2D: Expression must be an array in this context: I.

The documentation says, "The image array to be rotated. This array can be of any type, but must have two dimensions."

You can try separating the color channels and rotating them individually (below). Or you could try to convert the rgb values to color table indices.

```
IDL> im = cgdemodata(16)
IDL> help, im
IM              BYTE      = Array[3, 227, 149]
IDL> r = reform(flipIm[0,*,*])
IDL> g = reform(flipIm[1,*,*])
IDL> b = reform(flipIm[2,*,*])
IDL> rrot = rot(r, 60, 0.8, /INTERP)
```

```
IDL> brot = rot(b, 60, 0.8, /INTERP)
IDL> grot = rot(g, 60, 0.8, /INTERP)
IDL> rotflipIm = transpose([[[rrot]], [[grot]], [[brot]]], [2, 0, 1])
IDL> help, rotflipim
ROTFLIPIM       BYTE      = Array[3, 227, 149]
IDL> cgimage, rotflipim
```

Subject: Re: Is it possible to rotate a flipped image with cgImage?
Posted by atmospheric physics on Wed, 25 Jun 2014 13:14:47 GMT
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Hello Matthew,

Thanks for the example. If I see the images of im and (flipIm or rotflipIm), then there the rose color is changed to blue. I don't want to change the colors from my original image. I wanted to have my original image with all colors as they are and then only apply this flipping and rotation.

Without using interpolation, can't I retain my image as it is and enclose in the available space? I mean if the original image is a square type, the final rotflipIm can be rhombus type. Is this not possible? In order to fill the missing pixels of the im images, can't we use missing color as white?

Look's the image rotation is distorting the original image completely.

Thanks in advance,
Madhavan

On Wednesday, June 25, 2014 2:45:02 PM UTC+2, Matthew Argall wrote:
>> I get an error like this ...
>
>>
>
>> % POLY_2D: Expression must be an array in this context: I.
>
>
>
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>
>
>
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>
>
>

> IDL> im = cgdemodata(16)
>
> IDL> help, im
>
> IM BYTE = Array[3, 227, 149]
>
> IDL> r = reform(flipIm[0,*,*])
>
> IDL> g = reform(flipIm[1,*,*])
>
> IDL> b = reform(flipIm[2,*,*])
>
> IDL> rrot = rot(r, 60, 0.8, /INTERP)
>
> IDL> brot = rot(b, 60, 0.8, /INTERP)
>
> IDL> grot = rot(g, 60, 0.8, /INTERP)
>
> IDL> rotflipIm = transpose([[[rrot]], [[grot]], [[brot]]], [2, 0, 1])
>
> IDL> help, rotflipim
>
> ROTFLIPIM BYTE = Array[3, 227, 149]
>
> IDL> cgimage, rotflipim

Subject: Re: Is it possible to rotate a flipped image with cgImage?
Posted by on Wed, 25 Jun 2014 14:00:01 GMT
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Den onsdagen den 25:e juni 2014 kl. 15:14:47 UTC+2 skrev Madhavan Bomidi:
> Hello Matthew,
>
> Thanks for the example. If I see the images of im and (flipIm or rotflipIm), then there the rose color is changed to blue. I don't want to change the colors from my original image. I wanted to have my original image with all colors as they are and then only apply this flipping and rotation.
>
> Without using interpolation, can't I retain my image as it is and enclose in the available space? I mean if the original image is a square type, the final rotflipIm can be rhombus type. Is this not possible? In order to fill the missing pixels of the im images, can't we use missing color as white?
>
> Look's the image rotation is distorting the original image completely.
>
> Thanks in advance,
>
> Madhavan
>

The reverse command does not know anything about images, it only knows about arrays. And the first dimension of the rose image array is the RGB dimension (of length 3). If you reverse that, in effect you swap the red and blue channels.

If you want to flip it in any of the spatial directions, you should do reverse(im,2) or reverse(im,3), not reverse(im,1).

Subject: Re: Is it possible to rotate a flipped image with cgImage?
Posted by Matthew Argall on Wed, 25 Jun 2014 14:11:40 GMT
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As Mats pointed out, I forgot one line before...

IDL> flipIm = reverse(im, 2)

The following requires a 2D image, but it will do what you want. For 3D images, it would probably be easiest to use the Image() function.

cgLoadCT, 13
cgshade_surf, bytarr(227,149), indgen(227), indgen(149), SHADES=bytscl(dist(227,149)), ROTZ=60, ROTX=90, XSTYLE=5, YSTYLE=5, ZSTYLE=5

Subject: Re: Is it possible to rotate a flipped image with cgImage?
Posted by David Fanning on Wed, 25 Jun 2014 16:58:58 GMT
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Madhavan Bomidi writes:

>
> I have a .JPG image, which requires flipping over the top-down axis before rotating the image by 60 degrees (clockwise counting).
>
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>
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> cgImage,rotImg,Position=pos2,/OVERPLOT
>
> I get an error like this ...
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> I don't see a problem with flipping of the image, but there is actually a problem with rotated image. While I know that with cgImage, I can use the keyword /NEGATIVE for flipping the image but there is no option for rotating the flipped image. Anyone with a solution and an example will be of great help.

I would do it like this:

```
filename = Filepath(SubDir=["examples","data"], "marsglobe.jpg")
imageOrig = Read_Image(filename)
image = Transpose(imageOrig,[1,2,0]) ; For ease of handling
image = Reverse(image,2) ; Reverse in Y direction
r = Rot(image[*,*,0], 60, 0.9, Missing=255)
g = Rot(image[*,*,1], 60, 0.9, Missing=255)
b = Rot(image[*,*,2], 60, 0.9, Missing=255)
rotImage = [[[r]],[[g]],[[b]]]
cgDisplay, 900, 300
!P.Multi = [0,3,1]
cgImage, imageOrig
cgImage, image
cgImage, rotImage
!P.Multi=0
END
```

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thue. ("Perhaps thos speakest truth.")

Subject: Re: Is it possible to rotate a flipped image with cgImage?
Posted by atmospheric physics on Thu, 26 Jun 2014 16:39:23 GMT
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Thanks to Mats, Matthew and David. I did in a different manner now using SPAWN tool.

```
SPAWN, 'convert '+image.JPG+' -flop -rotate +60 '+imageFlopRotate.JPG
```

This works fine in my IDL code!!!

Regards,
Madhavan