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## Vertical Alignment of Panoramas with PTGui

## Forum overview

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Vertical Alignment of Panoramas with PTGui (#p1436)

by WillyKaemena » Wed Apr 22, 2009 2:37 pm

Some of the 360cities photographers have sometimes some problems with the correct vertical alignment of the panorama: To make this task clear and easy I would like to explain the process with a sample panorama and the corresponding screen shots. Reason for not perfect vertical alignment is a not vertically aligned tripod/monopod. But don't worry about it, you can take the shots for a panorama at any angle of the tripod /monopod as long as you maintain this angle during the whole round of the shots for that panorama. The correct vertical alignment can be easily achieved within PTgui.

1. Stitch and optimize the panorama as usual. Don't worry about the wrong vertical alignment at this stage.



2. Go to the control points Tab and choose an image with a clear visible vertical line, like a building corner which you could assume to be vertical. Set manually a control point on this corner like in the next screen shot. I have chosen the left corner of the white building



3. Then go to the Optimizer Tab and tick the Pitch and Roll of that image where you have set the vertical control points. (in this case Image 0) and click the Run Optimizer button.

Project Assistant	Source Image	s	Lens S	ettings	Pan	orama Settings	Crop	Image Parameters
Optimizer	Exposure / HDR Prev		eview Create Panorama					
The Optimizer will adju	ist the image a	nd lens	paramet	ers unt	il the cont	rol points match as	closely as poss	ible.
<< Simple								
Optimize globally:	Optimize p	er imag	e:	Lin	k roll 📃	Link pitch		
Field of View		Yaw	Pitch	Roll	Viewpoir	it		
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d (lens distortion)	Image 1	۲	۲	۲	8			
c (lens distortion)	Image 2	۲	۲	۲	8			
Horizontal shift	Image 3	۲	۲	۲	8			
Vertical shift	Image 4	۲	۲	۲	8			
	Image 5	۲	۲	۲	8			
Horizontal shear	Image 6	۲	۲	۲	8			
Vertical shear	Image 7		۲	2				
	•t		-					

You will get the same optimization values but your panorama editor window will show immediately the changes.



Now you can see that the aligned building corner is vertical, but unfortunately the whole panorama is still not vertically aligned. This happens sometimes and depends on which corner you have chosen by chance. In this case it is necessary to make a second alignment. Go back to the Control Points Tab and choose another second vertical line for the alignment process.

	P ~ 12 (	test1 * - PTGu	i Pro registered to Willy	/ Kaemena	
Project Assistant Control Points	Source Images Optimizer	Lens Settings Exposure / HDR	Panorama Settings Preview	Crop Create Panorama	Image Parar
Provide control point overlapping images.	ts (matching points on It's easy: simply click	two overlapping picto on matching points or	ures). As a rule of thum 1 both images.	b, provide at least th	ree control poir
overlapping images.	It's easy: simply click of the sease of the	6 7	Index Left 0 (2143)	2 3	4 5
(1621 2938) r=87 g=84	h=85				

Run the optimizer as before with the same pitch and roll settings as before ( in our case Roll and Pitch on image 0 !!) and you will see in the Editor window immediately the perfectly aligned panorama.



HINT: by moving the little triangle at the bottom of the editor window you can display a grid which comes handy to check the vertical alignment of a panorama.

Last edited by <u>WillyKaemena (./memberlist.php?mode=viewprofile&u=78)</u> on Wed Apr 22, 2009 6:26 pm, edited 1 time in total. Top

Re: Vertical Alignment of Panoramas with PTGui (#p1440) by vincen-pujol » Wed Apr 22, 2009 3:30 pm

clear and efficient, great ;)

Тор

Re: Vertical Alignment of Panoramas with PTGui (#p1446) by Jeffrey Martin » Wed Apr 22, 2009 4:12 pm yes, great job Willy, thank you!

I'll be sending this link, any time I see a non-level pano on 360cities ;)

Тор

Re: Vertical Alignment of Equirectangular with PTGui (#p1459)

by WillyKaemena » Tue Apr 28, 2009 12:26 pm

If you have already stitched and edited you panorama and now found out that the final version of your equirectangular image has not properly aligned vertical lines, then you can work also on the already finished version of your panorama with PTgui !! Here how it works. Load your equirectangular image into a new PTgui project.

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Project Assistant	Source Images	Lens Settings	Panorama Settings	Crop
Image Parameters	Control Points	Optimizer	Exposure / HDR	Preview
Create Panorama				
1. Load images.				
Camera / le	ns parameters	m camera if availabl	e)	
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Lens type	Equirectan	guiar		
Hor. Field	of View: 360	•		
2. Align images				
Control p	oint assistant) (Ali	gn panorama) ( (	Optimize	
3. Create panoran	1a)			

important set in the lens settings tab all values on 0 (zero) and the horizontal FOV on 360

nage Parameters Control Points Optimizer Exposure / HDR Predict   Create Panorama Ereate Panorama   ter the parameters of your lens. If you don't know what type of lens you have, you should proba   ake a good guess of the Focal Length or Field of View value.   ns type: Equirectangular Cans database   prizontal Field of View: 360 °   vdvanced More description More description   Lens correction parameters: Image shift: Image shear:   a: 0 pixels hor. (g): 0   b: 0 vert (e): 0 pixels vert (t): 0   C: 0 0 pixels vert (t): 0 0   Use individual parameters for: Image 0 Image 0 Image 0 Image 0	roject	Assistant	Source I	mages	Lens Settings	Panor	rama Settings	s Crop
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Lens correction parameters:       Image shift:       Image shear:         a:       0       pixels       hor. (g):       0         b:       0       vert (e):       0       pixels       vert (t):       0         c:       0       vert (e):       0       pixels       vert (t):       0         Use individual parameters for:       Image 0       Image 0       Image 0       Image 0       Image 0	rizont	al Field of V	/iew: 360	0				
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Now define some vertical control points

Project Assistant	Source Images	Lens Settings	Parlorania Se	congo	crop	Imag
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o	It's easy: simply click	on matching points o	n both images.			
CP type: Vertical			Index >	Left coord (1925, 351)	Right coord (1877, 535)	

(1809,897) r=135 g=120 b=113

Now go to the optimizer tab and run the optimizer.

	Source Image	s	Lens S	Settings	Panor	ama Settings	Crop	Image
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b (lens distortion)								
c (lens distortion)								
Horizontal shift								
Vertical shift								
Vortical choar								
vertical shear								
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now the panorama is perfectly aligned !! go to Create Panorama tab and create a new equirectangular. DONE :shock: :lol:

Image: Constraint of the second se	Panorama Editor +‡+ ++ 123	
	<image/>	
360° x 180° Equirectangular	Move panorama with the mouse, hold down Ctrl to rotate	

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