

Shooting For Quality & Width



By Nick Melidonis

Panoramas Part 2

In my previous article I outlined an introduction to panorama stitching, a technique that now is becoming very common with professional and enthusiast landscape photographers. The new Photoshop CS3 has some interesting and very effective tools for stitching and Nick Rains in the winter 2007 edition of *Better Photography* outlined how to use this industry standard imaging software to obtain good results. There will be many enthusiast photographers who may consider Photoshop CS3 a little out of their budget and may want to 'dip their toes in the water' with a more cost effective piece of stitching software before blowing the budget. This article will offer the option of an excellent software program that I find produces amazing results.

There are many programs available on the net including Realviz Stitcher (www.realviz.com), Arcsoft Panorama Maker (www.arcsoft.com – often supplied with Nikon cameras), Panorama Factory (www.panoramafactory.com), Canon Photostitch (supplied with Canon cameras), to name just a few.

If you are interested in trying one, most software companies will offer you a trial before buying.

The software I prefer to use is PTGUI (www.PTgui.com), which stands for Panorama Tools Graphic User Interface. At the time of writing, I was using version 7.0 which was available as a download from the website for 79 Euros. Joost Nieuwenhuijse supplied the front end interface program to Panorama Tools and made it very user friendly, which is more than I can say for many of the other commercial products available. I have also found that provided you take a bit of care in taking your photographs, you can still get an excellent result by hand holding the camera and shooting by just pivoting in one spot.

Shooting the Photographs

With all panorama images prior to stitching, it is essential that you follow a few simple guidelines and these have been described in detail in my last article. As a quick summary: ensure you keep the exposure, white balance and focus the same for all your images (not auto for any of these), so a



The Fremantle Sailing Club is only a short walk from my home and I captured the sunrise on a beautiful, still Autumn morning using a Canon 5D, Gitzo tripod, ISO 100, 1/20 second @ f8 using a 24-105 lens (no filters). The exposure was set for the brightest part of the image and kept the same for all the images.



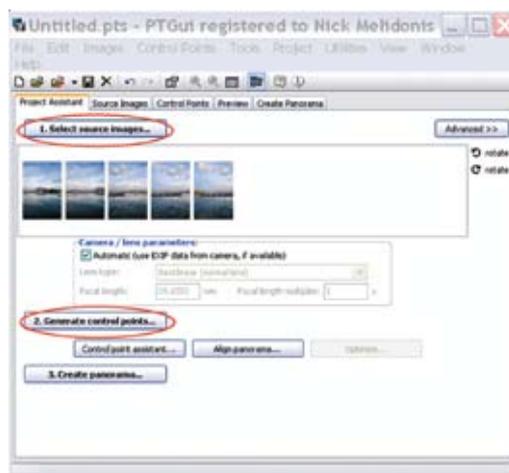
The completed stitch of the Fremantle Sailing Club after some minor image enhancements in Photoshop. The final image was printed 1.5 metres wide on canvas and the happy client thought that the original capture was from a large format panorama camera.

‘manual’ setting for your camera is useful. Where possible, use a tripod to keep the plane of rotation level. I also suggested that you use a focal length of around 35mm and longer to prevent distortion. Take vertical (portrait mode) shots to produce less distortion and to give more height to the final image. I suggest for your first try to limit the number of images to a single row of three to five exposures with a 30% overlap. Try to avoid placing important elements of your image at the ends where they overlap.

If you are like me and take hundreds of photos during a shoot, you can easily forget which photos you took for a panorama. What I tend to do (described in my last article) is to hold my hand in front of the lens and shoot a frame prior to starting the set of images. It mightn’t look very professional on the digital light box, but it works.

Preparing the Image Files

If you are shooting RAW, you will need to process the images as TIFFs or JPEGs and place them into



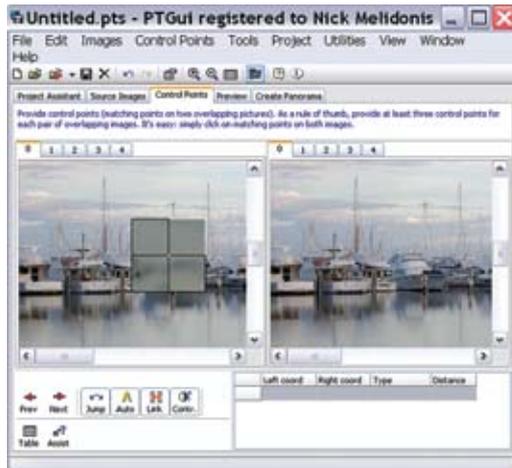
I converted the images from RAW to TIFFs and put them into a folder. As the capture was digital, the EXIF data box was ticked, the images selected and opened into PTgui. The ‘Create control points’ tab produced enough control points for the stitch.

a folder. Avoid enhancing each individual image separately while doing this otherwise it will make it difficult for PTgui to produce a seamless result. If you do need to make some RAW adjustments, copy and paste the changes to the other images for uniformity.



The panorama editor enabled me to adjust the orientation of the panorama by using the sliders.

If the software has insufficient control points to manage the stitch, then the advanced option allows the manual placement of control points aided by a magnifier. Normally you need at least three pairs of control points for each pair of overlapped images.



Using the Project Assistant

The simplest way to produce a result (provided you followed the guidelines in shooting above) is to use the Project Assistant in PTGUI because in most cases this will produce an excellent outcome. I will describe this first and then outline some more advanced options.

Click on 'Select Source Images' and browse to your image folder, select the images and bring them into PTGUI. Don't worry if they are not in order as the software will determine this. If your original images were shot with a digital camera, tick the 'Automatic – use EXIF data' box. Most stitching software needs to know the focal length of the lens used and the EXIF data contained in your image files will supply this. If your original



This series of images was captured at first light on a hill overlooking the Argyle River in the Kimberley Region of Western Australia. As you can imagine, the contrast between the exposure in the sky and the dark shadows in the river valley below far exceeded what a digital camera can capture in a single image. A series of bracketed images were taken of the scene and PTgui was able to blend the various exposures successfully to produce a large single image with detail both in the sky and the valley. The technique used is not difficult, but is beyond the scope of this introductory article.



Argyle River, Kimberley region, Western Australia produced by stitching a series of bracketed images to produce a dynamic range of around 10 stops.

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2003 AIPP Landscape Photographer of the Year,
World press award (2nd Environment stories section)
2005 AIPP Highest scoring print & Photo Book of the year
2007 NSW AIPP Photographer of the Year



Mike Langford

Fellow/Master Australian Institute of Professional Photography,
Fellow New Zealand Institute of Professional Photography,
1992 Australian Geographic Photographer of the Year,
2002 NSW Landscape Photographer of the Year,
2004 NSW Landscape Photographer of the Year,
2006 NZIPP Photographer of the Year, Landscape Photographer,
Corporate, architecture photographer of the Year,
2007 AIPP Landscape Photographer of the Year





The manual control point method was used in this misty landscape taken on a cold dawn in the old Dutch town of Maastricht. The soft edges made the auto matching of control points difficult, but once entered manually, PTgui had no problem in completing the stitch.

capture was film, enter the focal length of the lens you used (it would be a good idea to keep notes when shooting).

The software now needs to generate lots of control points or matching features in the overlapped images as points of reference to align each image to the next. All source images are analyzed and matching features found. By clicking on the 'Generate Control Points' tab, PTGUI will automatically do this. Most of the time, if you adhered to the shooting guidelines, it will do an excellent job. If you now click on the 'Control point assistant' tab, it will tell you if there are enough control points and if not, you can manually choose to put in some control points of your own to help the stitch. The panorama editor window will appear to show you a preview of the result so far.

To modify the orientation of the panorama, you can use the left mouse button to move the panorama and the right mouse button to rotate it. Alternatively, you can use the sliders on the horizontal and vertical axis to do the same thing. More often than not, I just let the program finish the panorama and crop it in Photoshop afterwards. Note, normally you would use the default rectilinear view of the panorama.

You are now ready to press the 'Create Panorama' tab. PTgui allows several options for quality. I personally choose to go for the best quality and when I press the 'set optimum size' tab, I choose 'maximum size' and 'TIFF' for the file format. If you wish to fine tune the individual images in Photoshop, you can choose a Photoshop 'psd' file and 'blended and layers' from the layers option. Choose which folder you wish the file to be saved in and click the 'Create Panorama' tab to complete your masterpiece.

I find using the Project Assistant very easy and intuitive and rarely do I need to go any further to produce an excellent result. Compared to many stitching programs I have tried over the years, I find this to be the easiest and most accurate program. The blending of the images is seamless,

especially in the sky where errors can be the most noticeable. Having now produced a final stitched image, you can open it in your favourite imaging program and carry out any final image enhancements.

Manual Control

Occasionally, PTgui needs some help to find more control points to produce an accurate stitch. An example of this was when I tried to stitch a long panorama of a misty dawn scene in the old city of Maastricht. The mist produced very soft edges and the program struggled to find enough control points (normally you need at least three control points for each pair of overlapped images). By clicking on the 'control points tab', I was able to manually place pairs of control points, assisted by a magnifier, to help accurately locate the points. Once this was done, PTgui quickly assembled the stitch.

If you find some ghosting appearing between images where elements in the image have moved (e.g. people walking, traffic etc), the masking of the layers in Photoshop enables you to remove this and the PTgui website has an excellent tutorial to help you.

Use the free trial version of PTgui and decide for yourself if the program is for you. For landscape shooters who don't want the expense of a Hasselblad X-pan or a 6x17 panorama camera, digital stitching is a relatively painless and cost effective option for producing large panoramas with 6-10 megapixel cameras.

Nick Melidonis is a Master of Photography and has twice won the AIPP Australian Landscape Photographer of the Year. He was also the 2005 WA Landscape Photographer of the Year. Nick leads photo tours to the Greek Islands and in 2008 Andalucía in Spain. He conducts seminars and workshops and is available as a speaker. You can contact Nick at nickphoto@iinet.net.au or visit his website at www.nickmelidonis.com.

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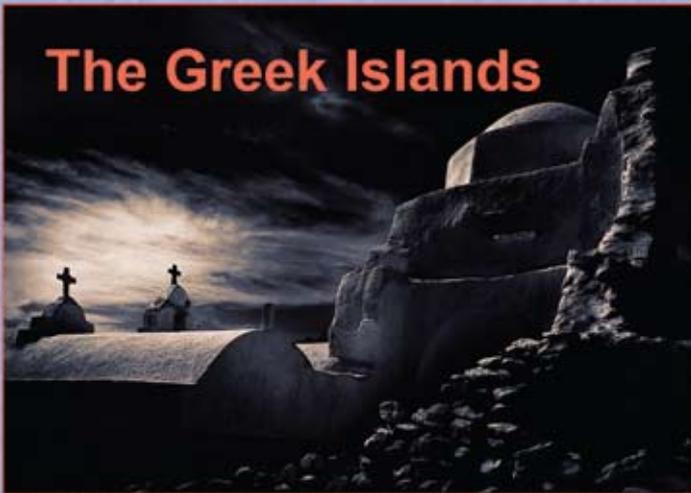
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