Hugin Usage Manual

A Rough Notebook

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Read this through first before using, if only to observe that continuity stumbles through some topics, and that sudden shifts in goals arrive without notice.

Help That Is Available

For the best/most current help outside of that found where you find the tools, there is the newsgroup:

local.panotools.main

served at:

news.panotools.org

If you are not familiar with newsgroups (also called usenet); then ask someone (like me), because there is a wealth of information hidden in the dross of correspondence (running at more than 14000 postings – in other venues, I have posted upwards to 10000 myself over the past 12 years). You ***will*** run into personalities of every persuasion and there is an etiquette to be observed lest you be flamed. If you are unfamiliar to flaming, its meaning will become immediately obvious when you commit a faux pas.

Aside from the newsgroups, consult:

http://hugin.sourceforge.net/tutorials/index.shtml for general to specific information

http://hugin.sf.net/tutorials

http://wiki.panotools.org/Main_Page for related information (good tutorials that relate to Hugin)

Obtaining And Installing Hugin And The Pano Tools

Obtain a copy of Hugin at:

http://sourceforge.net/project/showfiles.php?group_id=77506

Extract the contents to the Program Files directory, and then make a shortcut to hugin.exe, putting it in a convenient folder for quick calling.

The next order of business is to locate and download autopano-sift from: http://user.cs.tu-berlin.de/~nowozin/autopano-sift/

This comes with a conventional installer; simply follow the default selections and install.

First Time Operation With Test Images

Open hugin.exe, and as the startup suggests, begin an Assistant (tab) session.

1. The first thing the assistant will ask for are the images to be stitched together;
2. the second thing to happen is hugin asks for the location of autopan.exe, use the file open dialog window that opens to locate it (where it was installed above);
3. during my first attempts, many error windows opened, but then, so did my image

files within the hugin application when I simply closed them to proceed:

4. in the ***Assistant tab***, make the following entries:
    1. set **Lens type** (mine is a simple point and shoot): **Normal**;
    2. set **Focal Length** (mine is much the same as the default): **5.4mm**
5. in the ***Control Points tab***,
    1. click the cross hair on any distinctive feature found in both images. This will immediately magnify the vicinity of that point allowing the Control Point to be dragged with more precision.
    2. click the cross hair on the same distinctive feature in the other image, the application may even complain about your selected point, and yet offer you exactly what you "thought" you wanted;
    3. click the ***Fine-Tune*** button in the lower pane;
    4. click the ***Add*** button in the lower pane to complete the pair;
    5. repeat 1 through 4, here, pair-wise.
6. in the ***Optimizer tab***,
    1. click the ***Optimize Now!*** Button;
    2. a pop up window called ***Optimisation Result*** will open, click ***Yes***;
7. in the ***Stitcher tab***,
    1. set ***Panorama*** to **Rectilinear** (or whichever view makes sense);
    2. click on the ***Calculate Field of View*** button;
    3. in ***Quick Stitcher***, select the output image file type in ***Stitch the Images into a high quality JPEG***;
    4. click ***Stitch Now!***
    5. Barring exceptional luck, it is unlikely that the first panorama generated will be faithful to your imagined outcome. As I do all my shots freehand (no tripod) there are problems in the roll, pitch and yaw that need correcting. Also, images are rarely exposure matched when using an automatic setting, and some pre-processing will be in order to match tonalities.

Subsequent Operations

The first time walk through above was a simple exercise, and here I follow up with some of the tool-set that aids in correcting some of the simple problems of perspective like removing distortions or straightening the horizon.

With Hugin running, review the tool bar at the top of the application by slowly passing your mouse cursor over each icon to observe the pop-up description. Towards the right side you will encounter the ***Preview Panorama*** icon. Press this when you have loaded at least two images that you wish to stitch together.

Functional Discussion

What follows is taken on a tab by tab basis, sort of like amplified help for each functional pane of the application. For those tabs that contain no real content, I found they covered fine adjustments for a later time that easily forgave my ignoring them in the

short term – or altogether.

Hugin

One way to to add images is to simply select them all at the system level (from a folder), drag and drop them onto the Hugin icon.

When, during a project, I selected to save the stitching as a Tiff file, Hugin prompted me to locate enblend.exe. This requires only pointing the file search window into C:\Program Files\hugin\enblend to complete the operations.

Assistant Tab

This is an automated means of doing simple panoramas (introduced in the first time usage described above).

Images Tab

This tab allows control over individual elements that can be adjusted in other tab windows. As such, you will probably rarely visit this tab, but it does include a very important setting. Here, you can choose the image about which all other images must defer, and here we set the ***anchor***. The controls for this characteristic are found at the lower left as ***Reference Image***. Select one or other of ***Anchor this image for position*** or ***Anchor this image*** for exposure as appropriate.

Camera And Lens Tab

no comments at this time.

Crop Tag

no comments at this time

Control Points Tab

This has already been introduced, but with the introduction of more images, it bears more discussion. As suggested, your panorama can be expanded with more than two images by simply clicking the ***Add Another Image*** button in the tool bar at the top of the application.

Only two images of a pair should be viewed through the appropriate selection of the numbered image tabs so that you can pick ***Control Points*** as described above.

Immediately following this operation, you should select the ***Optimizer*** tab and within it click the ***Optimize Now!*** Button. This will allow for the proper relationships if and when you ***Preview Panorama*** (or simply move on to the ***Stitcher***). Again, review the first time instructions already offered above.

Optimizer Tab

no comments at this time

Stitcher Tab

Selecting the Tiff ***image format*** from ***Output File Options*** at the bottom left will result in a slow, large, but very good image construction. This first usage will provoke Hugin to prompt you for the location of enblend.exe as described above in Hugin.

Be sure to also select the check box for ***Soft Blending***.

Preview Panorama Window

This view window gives you quick access to the wide variety of projections available to you. They are located in a drop-down selection widget in the lower left of the display. None present any radical departure from what you might be looking at initially, but each selection offers its own approach to correcting errors you might encounter.

Along with being able to select a projection, there is a tool bar at the top that allows image touch ups. Across the top (again, you should float your cursor over them for their pop-up descriptions) set the combined images' ***Center*** and ***Fit***. The cross hairs can be adjusted by centering the image with a left click, or the combined image rolled with a right click. The ***Straighten*** icon can help render a level horizon.

Appendix

hugin preferences

Autopano preferences

/allinone /path:%d /keys:%p /project:oto /name:%o /size:1024 /f %i

%o – output project (O.oto will be appended when using Autopano)

%p – number of control points between each pair

%i – image files%namefile – file that contains image filenames