



PicAligner v1.1

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Operations Manual

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What is PicAligner?

PicAligner is an OS X application which takes digital images and aligns them to each other using move / rotate / scale transformations. Speedy alignment is achieved via a two-point anchor system. You can also use the traditional nudge-many-times method. Most navigation mouseclicks can also be achieved with keystrokes - if you have many pictures to align, this can be very handy.

The aligned images can be assembled into a quicktime movie if you wish to do so.

What hardware does it need to run?

PicAligner requires OS X (tested on 10.2.8 and 10.3.7); and a fair bit of RAM (more is better). The "memory consumed" item on PicAligner's main window will give you an idea of how much memory it needs for your images.

Who are the authors?

Lars Jensen wrote the movie assembly code.

Tony Barry wrote the image alignment code.

You may contact Tony Barry at the following address:-

tonybarry2008 at this domain:- mac dot com

[Apologies for the antiSpam measure]

What does it cost?

PicAligner is free to good homes. No warranty of any kind. Do not use where failure may cause loss or injury.

Donations are gratefully accepted to assist with the web hosting costs ... Paypal is the best way to send funds.

What's the current version?

This release is v1.1 for OS X only.

How do I install it?

Extract PicAligner from its archive. Put it in your Applications folder.

How do I use it?

PicAligner uses anchor points to make the alignment speedy.

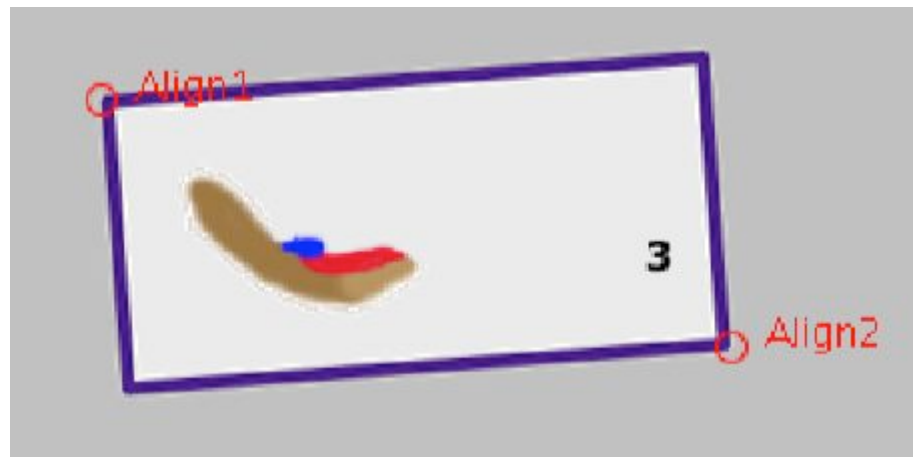
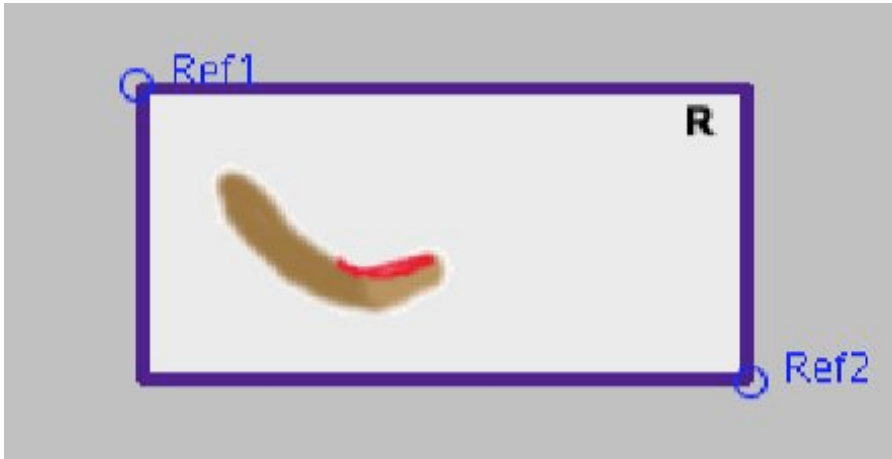
An anchor is a reference point on the image that you choose.

Most image series have some consistent features that do not change from image to image.

Make those features your anchors in the reference and in the aligning picture.

Example

Here are two images, supposedly of a microscope slide.
The reference image (labelled R) has its two anchors chosen.
The image to be aligned (labelled 3) has the same image landmarks chosen.



With PicAligner you get to see both images at the same time, the aligning image overlaid on the reference.



Then the anchors are coalesced (moved together).



Note:-

The first reference anchor point is the "pivot" about which the transformations (move, rotate, scale) occur.

In order:-

Align1 is moved horizontally and/or vertically to be over Ref1;

The aligning image is (optionally) rotated about Align1, such that the line Align1:Align2 has the same angle as the line Ref1:Ref2;

The aligning image is (optionally) scaled, centred on Align1, till Align2 resides over Ref2.

This algorithm for moving the anchors together is made more precise if you make the anchors as far apart as possible.

Other nice thing about PicAligner

- You can view your images either at 1:1 or "Fit in Window".
- The alignment window is zoomable to your screen.
- You can keep the same reference image for the whole series, or use the last aligned image as the next reference image (good where the camera is moving as well as the subject).
- You can save as TIFF, Pict, or JPEG; or copy the aligned image to the clipboard.
- You can nudge things manually if you prefer.
- You can preview your aligned image series as a series of stills, or a looped or reversed movie from within PicAligner.
- You can make a movie from the saved, aligned images.
- PicAligner was made with REALbasic v5.5 ... the best RAD dev tool for Macs.

Clunky things about PicAligner

- The images aren't cropped, so the borders show rotation whitespace. I might implement cropping for the next release of PicAligner - depending on user feedback (hint!).
- The movie code needs just image files (only) in the source folder, or it throws up "No image available" pics.