RRAZ Image Deblur Filter- Some Notes for Photographers

The top left below is a cutout portrait of my favourite chicken/escape artist. It was taken with my 1957 Jupiter 9 85mm lens. Because she doesn't listen to me when I order her 'Stay Still' there is some motion and out of focus blur. No matter what I did and what type of sharpening I did in affinity it just didn't look natural.
I took the cutout of the head and ran it through the deblur filter twice. Blended the area around the eye and beak with the first deblur, Blended in just the eye for the second deblur. The result (bottom left)and was then merged/blended into the original image with the result on the left side. See the second image, it may not look like much but sometimes I need to elevate an important image without introducing fake AI artifacts.



Top left: original, Bottom left: deblured, Right side: result

Deblurring vs. Sharpening vs. AI Enhancement

Imagine a satellite trying to read a license plate on the ground. The satellite's motion during the shot and the wavy atmosphere smear each letter into a fuzzy streak. Since you don't know the exact smear, the software estimates the most likely kind of blur that could have caused that fuzziness, reverses it, then adjusts its guess and tries again until the letters come back into focus. The information is still there—just smeared—and deblurring tries to un-smear it using its best guess.
This is different from sharpening, which just makes the fuzzy streaks look punchier, not readable. And it's different from AI enhancing, which might guess a plausible license plate number based on patterns it has seen—but could just as easily guess wrong. Deblurring tries to recover what was actually there; the other two don't.

The image below was a deblur of the full sized image, the result was subsequently blended back into the original image to enhance the signs, the people and activity.



The Grand Bazaar with a history of over 5 centuries, Iran (1977 the year the Eaton Centre was opened) Kodak Kodachrome 64

Sometimes as in this case due to a toy film camera your holiday shot turns out to be useless. Using deblur on a social media sized crop of this hilltown can just maybe look good enough to post. No



Top: Before Bottom: After Deblur

sharpening has been used on the deblurred result. It’s important to note the deblur filter scale dependant.

Also deblur can be used on a large sized image in place of output sharpening. The result is more organic than other methods. But this only works on some images and may need masking. To regions that have artifacts or like my chicken example have areas that are out focus with desirable lens blur Applying the deblur filter to the full size version of the hilltown image above resulted in too many artifacts to make it useful.

Note on running the filter from Affinity 3

The deblur filter is installed in Affinity under pixel filters RRAZ deblur (see installation instructions), it is designed to work with 16 bit per channel rasterized colour or grey-scale images, 8 bit or 32 bit images must be converted or the filter in the plug in menu will be greyed out. On my Nivida with a 12 Gbytes GPU the longest side should be less than or equal to 5700 pixels. The plugin and it’s companion depthmap filter are untested but might work in Photoshop.

The toy camera shot process had these steps.

1. Crop the original image
2. Reduce size to social media size
3. If not already then convert to a 16 bit pixel layer
4. Duplicate layer
5. Run deblur filter on the duplicated layer
6. Increase colour contrast by using the new live tone blend feature (with deblur layer against original layer)
7. Remove a few spots from the film scan.
8. Publish

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