

How to make a photo illustration with G'MIC plugin for GIMP:

I. Introduction:

This tutorial explains the basic work with the Photoillustration filter you find in section „Artistic“. This filter allows you to create illustrations from your pictures in almost any style you like them.

Before we start we should define a little closer what a „photo illustration“ is about. When you look up the term you find something like this:

photo illustration

A type of computer art that begins with a digitized photograph. Using special image enhancement software, the artist can then apply a variety of special effects to transform the photo into a work of art.

(http://www.webopedia.com/TERM/P/photo_illustration.html)

So that can mean anything. Nevertheless many people associate the term „photo illustration“ with the work of known photographers like Dave Hill, Jim Fiscus or Andrzej Dragan. Their style can be described as high contrast and razor sharp with a lot of details in all image areas, it is also often referred to as „photo hyper realism“. Often you can not say at first glance if the picture is photographed, painted or rendered.

Others have a different understanding of photo illustration, having a more abstract, painterly, comic art or vector art style in mind.

Please also keep in mind that many works which you find under the term „photo illustration“ are not made from one picture, but are composing art.

The Photoillustration filter is highly versatile and can bring all these picture styles to your images!

For understanding how to work effective with the filter you should learn a little about how human illustrators and painters work, because the filter was designed along that.

If you look at pictures of old masters you usually find controlled light situations in every part of the image. I.e. in Renaissance paintings you often see an indoor scene (portrait etc.) with a look through the window where the person in the foreground and the outside landscape both are perfectly lit. You rarely find large sections of black or white only. In photography you would refer to something like this as HDR image nowadays.

You find dramatic light architecture in painting styles of chiaroscuro, but also here full of details in the light and the dark parts of the image. Rembrandt gives a good example for this.

When a painter starts to paint he usually begins with the outlines of his scene. After that the picture is refined more and more. Simplified areas of even colors you find in

the „low interest“ parts of the image whereas more detail show up in the „sweet spots“ where the artist wants to draw your visual attention.

And of course a painter uses a typical color look, his palette and may apply typical effect, his „signature look“ like a typical paint stroke or way to paint certain things.

Keeping this in mind you can now transform your photo into almost any piece of artwork you want to achieve.

II. The filter interface and general settings

When you set the G'MIC window to maximize you have all control options at sight without scrolling.

First you find the settings for the local contrast, followed by the settings for eroding the details from areas (smoothing) and for sharpening.

The next two controls allow you to apply special effects on the final image followed by a number of controls for the general image settings.

In the lower part of the filter interface are the controls for reconstructing and emphasizing details. These details are taken from the original image. At the bottom are the checkboxes to switch additional built in filters on and off.

The options of the settings are explained below in more detail. Output of the filter usually is the fully processed photo illustration, unless you tick the checkbox **keep detail layer separate** at the bottom. In this case the filter will return you the processed image without the detail reconstruction plus a separate detail layer. This is useful in case you want to apply the details reconstruction only in certain areas. You can set layer mode and strength individually then for the detail layer and –which advanced users may like to do- use layer masks in GIMP for the detail layer too.

This checkbox has also built in options for the **preview** you can use for visual control of the detail layer even in case you finally let the filter compute a complete merged image.

Usually in mode **Full** the filter shows you the preview of the processed image and in any of the split modes you see the before / after effect.

If you tick the checkbox in mode **Full** the preview changes from the filtered image to the detail layer only and in the split modes you see the result of the filter without the detail reconstruction plus the separate detail layer.

When finding your settings i recommend to tick this box on and off so you can make your settings for the details under full visual control of the details only too even if you desire to have just the complete image as output.

The default settings should give you a nice decent photo illustration look on most pictures and with all the controls you have full access to hundreds and hundreds of different picture styles.

The number of controls may look confusing at first glance but you should keep in mind that photo illustration is a complex workflow and if you would do all manually you would have easily have a dozen of layers and several hundred setting options for all steps.

Photoillustration :

adding an illustrative effect to any photograph

Local contrast style	tone mapping	
Local contrast effect	<input type="range" value="0.25"/>	0.25
Smoothing style	anisotropic	
Contour precision	<input type="range" value="0.30"/>	0.30
Area smoothness	<input type="range" value="0.50"/>	0.50
Sharpening radius	<input type="range" value="0.50"/>	0.50
Sharpening strength	<input type="range" value="1.00"/>	1.00
Special effects	none	
Effect strength	<input type="range" value="5.00"/>	5.00
Overall lightness	<input type="range" value="0.00"/>	0.00
Overall contrast	<input type="range" value="1.00"/>	1.00
Shadows lightness	<input type="range" value="0.00"/>	0.00
Highlights lightness	<input type="range" value="0.00"/>	0.00
Mid tone contrast	<input type="range" value="1.00"/>	1.00
Color green-magenta	<input type="range" value="0.00"/>	0.00
Color blue-yellow	<input type="range" value="0.00"/>	0.00
Color boost	<input type="range" value="1.20"/>	1.20
Detail reconstruction detection	<input type="range" value="98.50"/>	98.50
Detail reconstruction smoothness	<input type="range" value="5.00"/>	5.00
Detail reconstruction strength	<input type="range" value="0.50"/>	0.50
Detail reconstruction style	micro/macro details adjusted	

Keep detail layer separate

Remove artifacts from micro/macro detail

Skin tone protection

Sharpen edges only

WARNING: this filter may run slow on larger images,
downsize your image before running the filter if necessary

Preview type

Author : Tom Keil / Last update : 2011/01/12

[Filter explained here](#)

III. The filter options

This section explains the various settings of the filter options in more detail:

With the selector **local contrast style** you can select various methods of increasing the local contrasts and enhance the details of your image.

tone mapping uses the tone mapping operator of G'MIC based on Poisson equations. The higher the strength-setting is, the more details show up and local contrasts are amplified, but with very high settings the operator also amplifies image noise.

local equalization is a similar operator but focuses little more on contrasts than on details.

unsharp mask uses the technique of local contrast enhancement by unsharp masking with a wide radius. The optimum radius is calculated automatically from the image size.

global mapping applies a global tone mapping operator which reduces the global contrast and keeps the local contrast untouched.

dynamic range increase applies a combined global and local operator which amplifies local contrast and details in one and also globally maps the tones taking special consideration of shadow and highlights section.

All local contrast operators can amplify image distortions and noise, which may look bad in particular on human skin tones if applied strong. You can limit the effect of local contrast enhancement by ticking the box **skin tone protection**. This enables an internal filter which smoothly masks out skin tones and leaves the local contrast enhancement untouched for the rest of the image.

The settings for **highlights lightness** and **shadows lightness** influence the local contrast effect too. Adjusting them brings the image to an adjusted tonal range more easy to enhance local contrast (exception: mode „global mapping“, in this mode the highlights / shadows settings for technical reasons are applied after the local contrast enhancement).

The next section for smoothing and sharpening is also very important for your picture style. With the controls here you adjust your picture to a more realistic looking illustration or a more abstract artwork.

The **smoothing style** together with the settings for **contour precision** and **area smoothness** decide about the erosion of details and artistic impression.

anisotropic smoothing gives you a realistic but smoother image at low settings and a painterly abstraction at higher settings. **bilateral smoothing** results in more even areas at lower settings and a kind of „dreamy“ abstraction at higher settings. **color channel smoothing** gives a very decent denoising by smoothing the LAB color channels. Strong settings can result color bleeding.

segmentation gives a comic style, vectorized look of areas of even colors, and **morphological closing** gives you a very painterly, pointillist and impressionistic effect. **edge preserving** is similar to **anisotropic** but stronger preserving edges and details.

Play with the settings to find your personal favorite picture styles.

The sharpening is performed as unsharp mask in the LAB L-channel plus darker edges are emphasized more than light edges. Through this you can apply quite strong sharpening without visible halos. In case you find artifacts in even areas with strong sharpening settings you may also switch the tick box for **Sharpen edges only** on. In this case areas are protected from sharpening by internal edge masks, which results in sharpening of the edges only. The mask is computed automatically depending on the slider settings and the image size.

The **various controls for lightness, contrast and colors** allow you to adjust the overall look of your image. They all operate in LAB color space to keep lightness and color information separate (also in the local contrast manipulation colors are not affected).

Although such adjustments can be also done in GIMP or with other G'MIC filters from technical viewpoint it turned out useful to have all these settings integrated in the filter. Creating a photo illustration is sometimes very extreme processing and doing everything within a G'MIC filter keeps all calculations within the 32 bit floating point engine. This eliminates rounding errors which over several steps otherwise may lead to image distortions like banding.

In the „detail reconstruction“ section at the bottom after raising the abstraction degree of your image before you now bring back details in the style and strength you want. Details are taken from the original image, you can emphasize them in multiple ways and styles. In general the details are controlled by the sliders **Detail reconstruction detection**, **Detail reconstruction smoothness**, **Detail reconstruction strength** and the **Detail reconstruction style** checkbox. However, some detail styles are a bit more complicated than others and the sliders may have multiple effects which are explained below:

With the **Detail reconstruction detection** you decide if fine details or just broader features are detected. If you move the slider to the right, you get all fine details. If you move the slider to the left, the detector emphasizes only the more prominent image details.

With the **Detail reconstruction smoothness** you decide how clear or smooth your details appear. Please note that in some modes with high smoothing settings you will get such high degree of detail distortion that you have more „relief style“ of detail layer, which can be used to emphasize light and shadows too. With the **Detail reconstruction strength** you decide how strong the reconstructed details appear in your final image. Usually the optimum blending mode is set by the filter, but with the checkbox **Keep detail layer separate** the filter returns your details as separate layer, so you may choose any blending mode you like in GIMP and use a layer mask to let your details only appear in image regions you want to have them.

Following specialties occur: With detail style **micro/macro details adjusted** finer and broader details are detected simultaneously. With the smoothness slider you blend out smoothly the broader details. With the strength slider the details are not only blended in but also amplified. This operator in most cases gives you a very well adjusted amplification of the image details. However, in some cases, and in very dark images this operator tends to produce artifacts. Those can be removed by enabling the anti-artifact option for this layer style by ticking the checkbox. Anti-artifact is only for this detail style.

The detail styles **fine** and **strong** have no special functions, they deliver fine line details or stronger emphasized details.

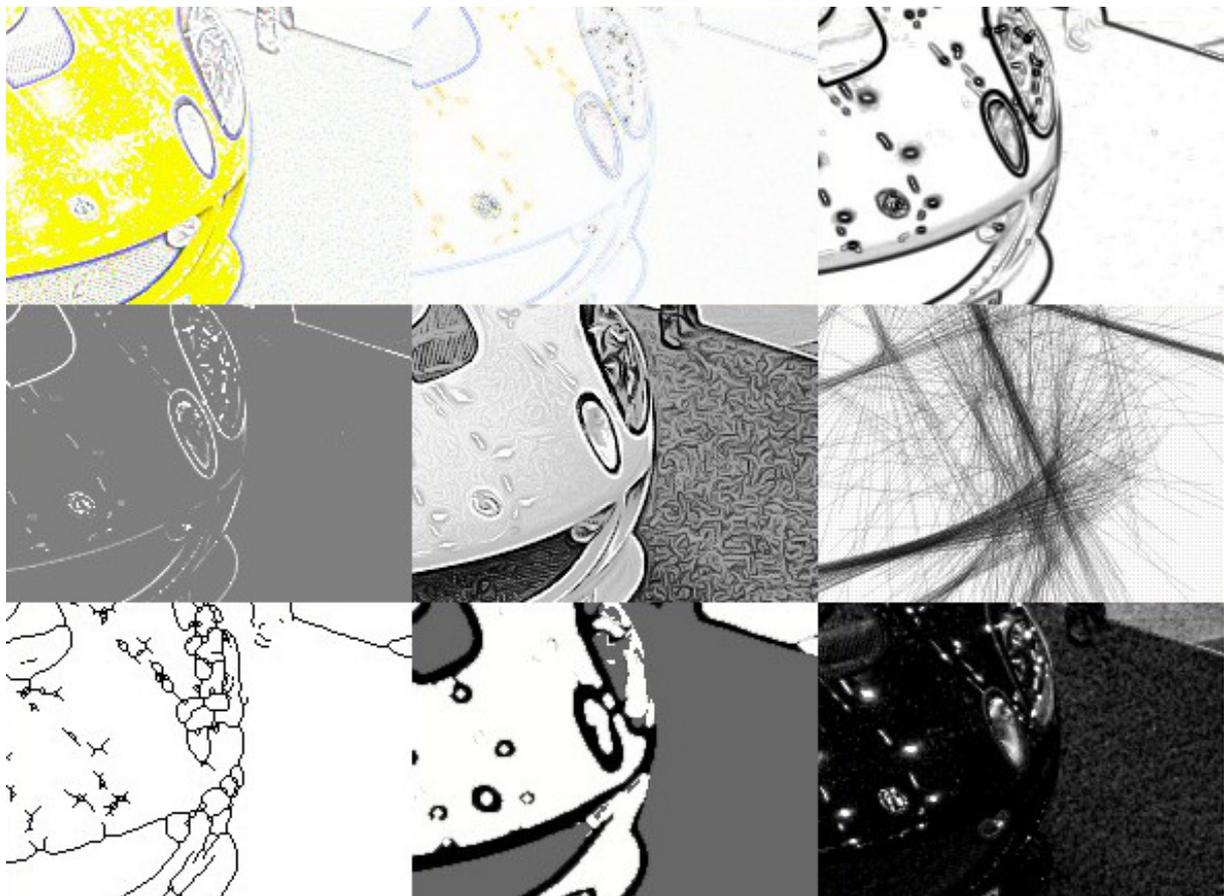
With layer style **high pass** the smoothness slider regulates the contrast of the high pass layer and let the high frequencies pop out more or less. Higher settings lead to smoother, more natural image looks which usually look good on portrait images.

artistic round detail style gives you the look of a soft pencil sketch on the image details and **artistic hard** emulates the effect of hard pencil strokes on millimeter paper. **artistic modern** emphasizes the details by a line art mosaic, all lines are of uniform thickness and with the smoothness slider you regulate the size of the tiles.

comic style mimics the workflow of a human cartoonist by drawing the outlines plus painting the dark shadow areas. With the detection slider you decide how fine details detected are and which areas are detected as dark shadows. With the strength slider you influence as usual the total blending and also the color of the shadow areas from middle grey to total black.

Detail style **gritty** amplifies the details from the blue channel to give a gritty look often called „Dragan style“, which may look good in particular on older peoples portrait shots.

Detail styles overview:



The **special effects** section allows you to apply some selected special effects on the final image. Please note: If you keep your detail layer separate the special effect is only applied on your image without the reconstructed details (also see preview)

Soft glow adds the effect of G'MIC soft glow filter. Try higher settings of **effect strength** for a dreamy look and lower settings for a sometimes interesting “volume increasing” effect on surfaces. **Dusty** adds a special, dusty type of blur with a slight tone mapping effect to the image. **Orton glow** adds the famous Orton effect to the

image, consisting of the combination of the image with a blurred copy. **Extra smooth** adds additional final smoothness to the image areas while keeping the edges intact. **Bloom** adds a highlight blooming effect by selecting the highlights, enlarging and blurring them and the blend it with the image again, it is an alternative to the Orton glow with a little different look. **Paintstroke** adds a more abstract painterly style to the image. All selections, blurs and blending strengths are controlled by the setting of the slider effect **strength**.

IV. Which pictures to choose best

Stronger settings of the filter lead to heavy editing which may create or amplify problem areas in your image like noise or halos. Best you use well exposed images with a lot of details in the dark and light areas. The photo illustration style looks most impressive on pictures which already have a lot of detail contrast before processing. A good example for this are pictures taken with off camera flashes, shot in the “strobist” style.

V. Next steps

More advanced users may find that they get even better results if they apply different settings on different areas of the image. This may be done by selections, the filter works on selections as well as on a whole image. Or make several layers with different styles and use masks in GIMP to blend them.

Further postwork on your image by dodging and burning can often improve your results significant, you can do it manually or use G´MIC filter dodge&burn in section lights & shadows.

Also painting with light, done manually on one or more extra layers fits well to this image style and can make your images more impressive.

For more information and examples visit the G´MIC group on flickr (<http://www.flickr.com/groups/gmic/>) and this thread (<http://www.flickr.com/groups/gmic/discuss/72157625286460093/>)