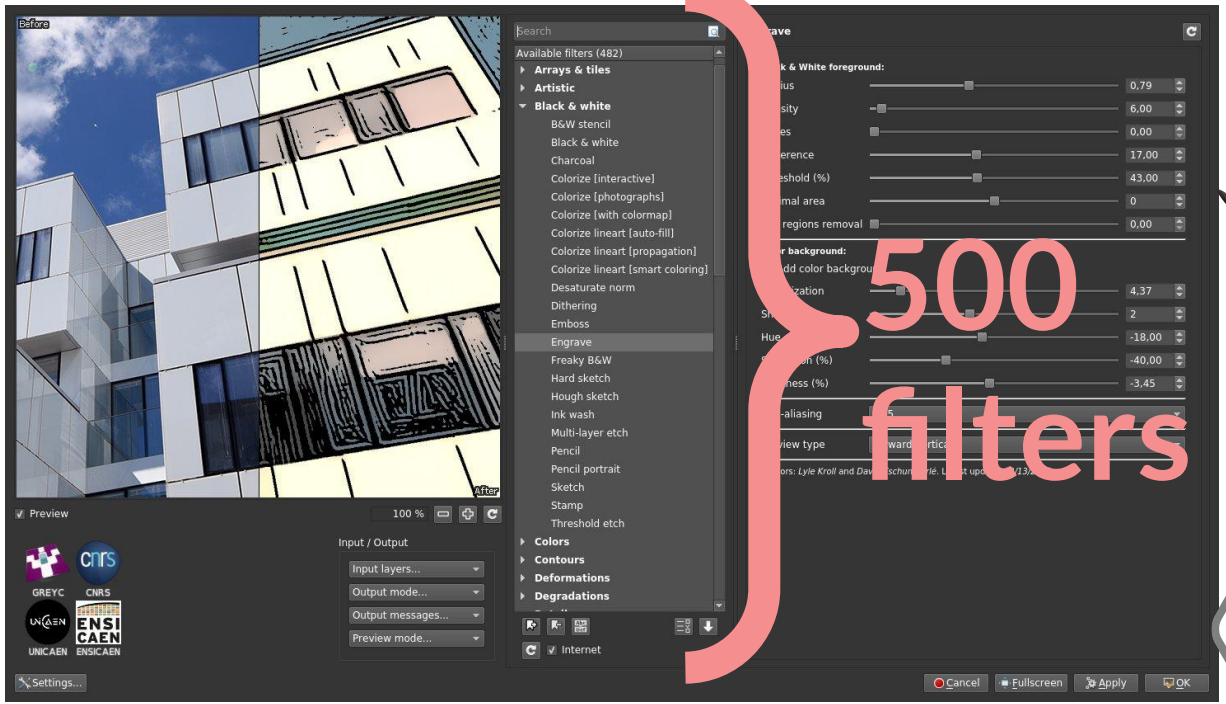
G'MIC
x
Python
X
Numpy
x
Blender

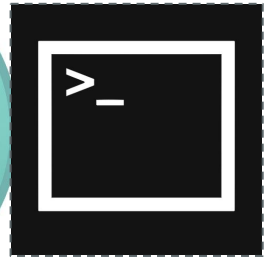
GREYC cnrs INS2I ENSI CAEN

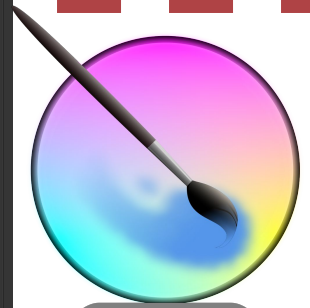
LIBRE GRAPHICS MEETING 2020 RENNES 26-29 MAY

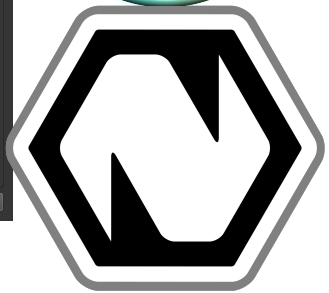
G'MIC in 30 seconds



500 filters







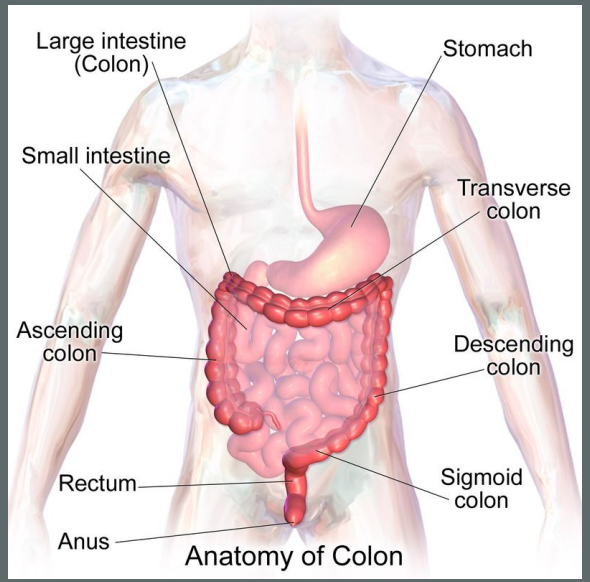
GOOD NEWS

FUNDING FOR 1 PYTHON DEVELOPER FOR 1 YEAR for G'MIC

I - Into the guts of gmic-py

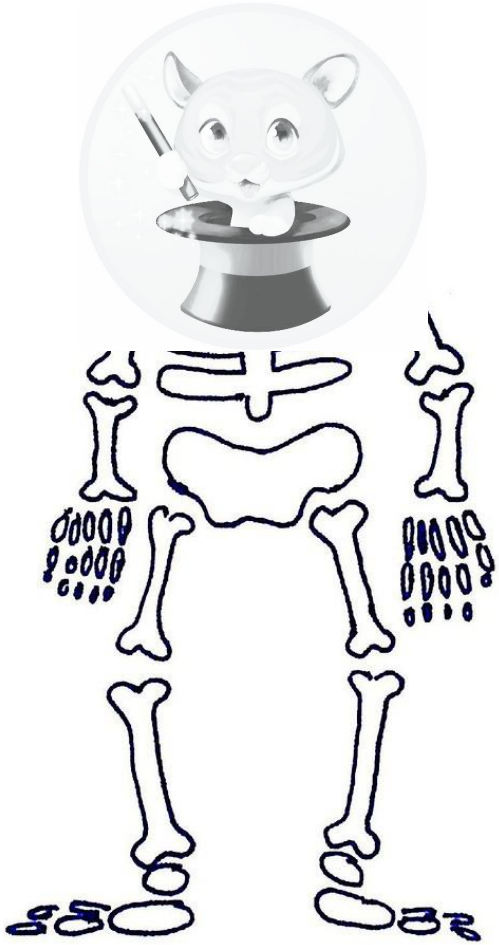
x

x



G'MIC IS

- 1 PACKAGE
- YOUR IMAGES
- 1 LANGUAGE
- 1 INTERPRETER



G'MIC C/API Python binding

G'MIC C++

wget gmic29x.tar.gz ; make

#include <gmic.h>

image = new gmic_img();

images = new gmic_list(...);

gmic(images, "blur")

G'MIC Python

pip install gmic

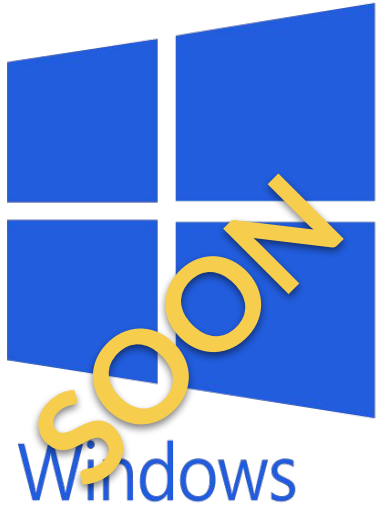
import gmic

i = gmic.GmicImage()

l = [i, i, i]

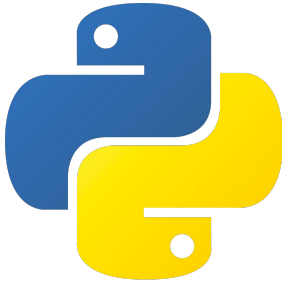
gmic.Gmic().run("blur", l)

OS support (64bits mostly) for Python 3.5+



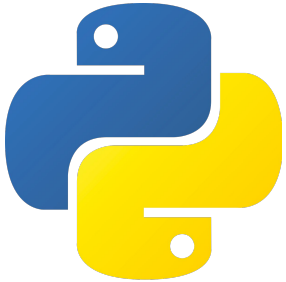
With:
brew install **libomp**

gmic-py demo - level 1



Installing, reading and writing images with 1 command, 1 filter

gmic-py demo - level 2



Real-life example - processing.js game map

gmic-py demo - level 3

pytest

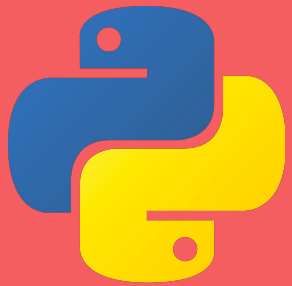
Massive headless testing of

G'MIC filters using filters290.json

GitHub

ALPHA SUPPORT

II - G'MIC x Numpy

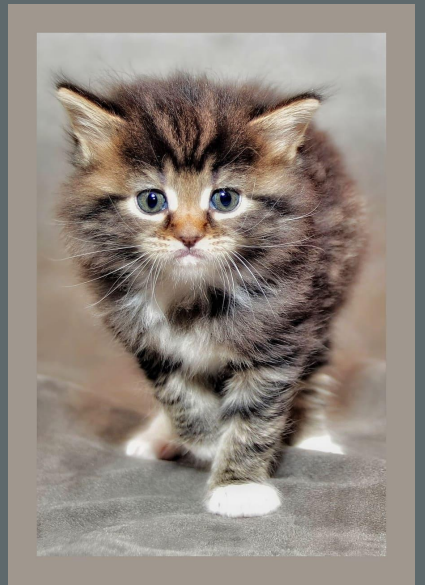


Grace Hopper & UNIVAC
CC Unknown (Smithsonian Institution)

G'MIC +NUMPY MUST-KNOWS FOR DATA-SCIENTISTS

1. From gmic-py 2.9.1: builtin numpy support

Install numpy yourself



2. GmicImage⇔numpy.ndarray

```
GmicImage(numpy_array)
GmicImage.from_numpy_array()
GmicImage.to_numpy_array()
```

3. G’MIC works in float32 deinterleaved

Use GmicImage (de)interleave flags

Use ndarray.astype()

RGBRGBRGB

⇔

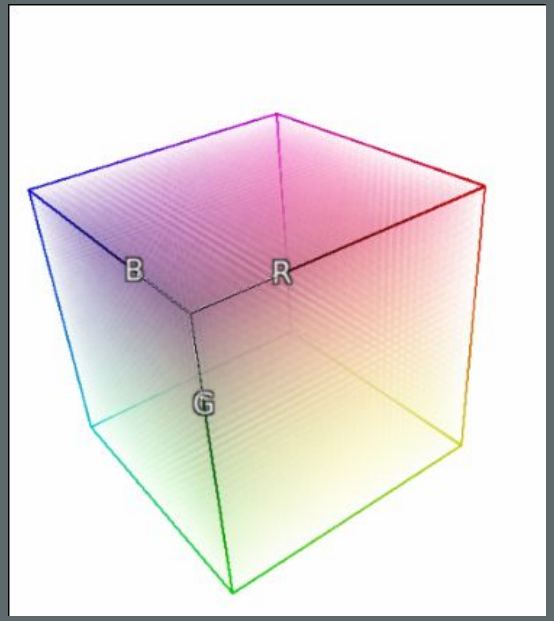
RRRGGGBBB

1-64bit bool-int-float

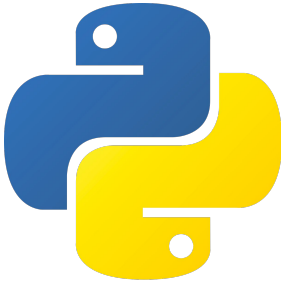
⇔

float32

4. G’MIC images are
   1D, 2D, 3D
   x
   ~2 billion channels



numpy demo



Using Pillow input & output with deinterleaving

III - G'MIC

X

Anthology of G’MIC and Blender

2017 *-Blender-2-G'MIC*

By StarfallRobles

Blender 2.76 - no patch required

2016 - VSE filters (gmic-cli)

G'MIC GTK widget (gmic-cli)

G'MIC Qt widget

Cross-platform

Enter a name for the output file.

Scene Preview/Render
View Settings
Safe Areas
Grease Pencil
Blender-2-G'MIC

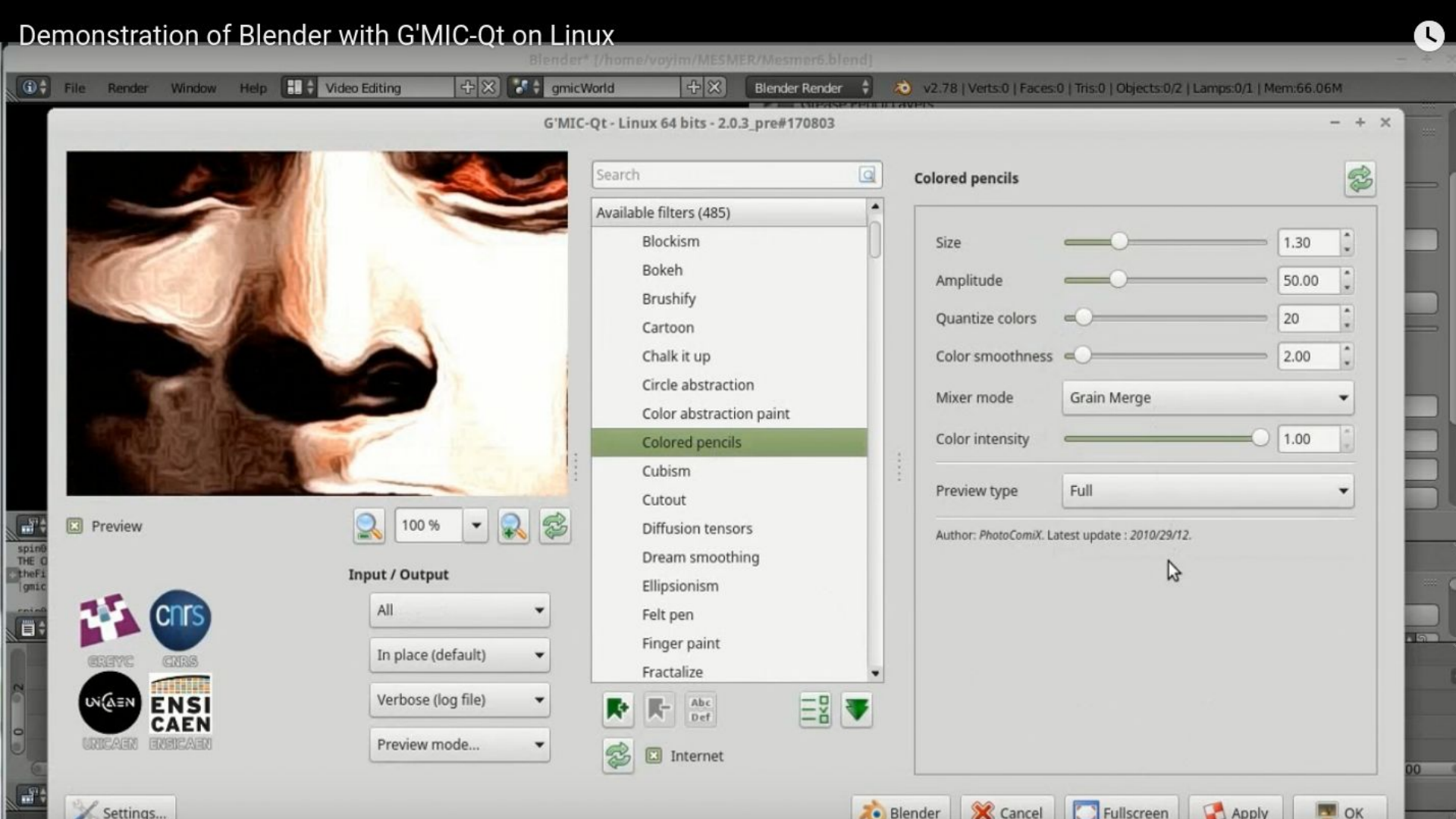
GMIC Filters
Filter Name: VectorPainting
Apply Filter Effect
Save Output
Destination File Name: ArmorCartoon.bmp
Commands
Image Tools
Prefs
Command Line: -gimp_vector_painting 9.5
Add - On Commands:
Save Command to VSE
Edit Command Text
Save Command Text
Delete Command Strip
Direct VSE Command:
Run Selected Command

Image Tools:
Open GMICrender Folder
Adjust render settings to image
Edit Strip with External App

VectorPainting
Details: 9.50
— Filter Author: David Tschumperlé —

WATERCOLOR
MAKE SQUIGGLY
PAINT DAUB
GRADIENT NORM
SYMMETRIZE
CARTOON
RAINDROPS
Tears-Short.mp4 : L:\Blender2GMIC\SourceImages\Tears-Short.mp4 | 487
Tears-Short.001: L:\Blender2GMIC\SourceImages\Tears-Short.mp4 | 779

Demonstration of Blender with G'MIC-Qt on Linux



2017-*Blender-custom-nodes G'MIC*

By bitsawer

Blender 2.79 - C++ PATCHED

Compositing nodes -1 G'MIC node

Based on libcgmic

Windows x64 build only

Blender compositor with a custom G'MIC node

Hopes for G'MIC and Blender

2020 - *gmic-blender*

WORK IN PROGRESS

By GREYC IMAGE / myselfhimself

Blender 2.8x - no patch

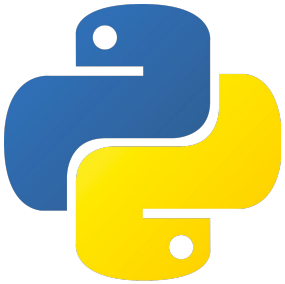
Stand-alone add-on

Embeds gmic-py - `import gmic`

`500 compositing nodes?`

Linux (MacOS, Windows soon)

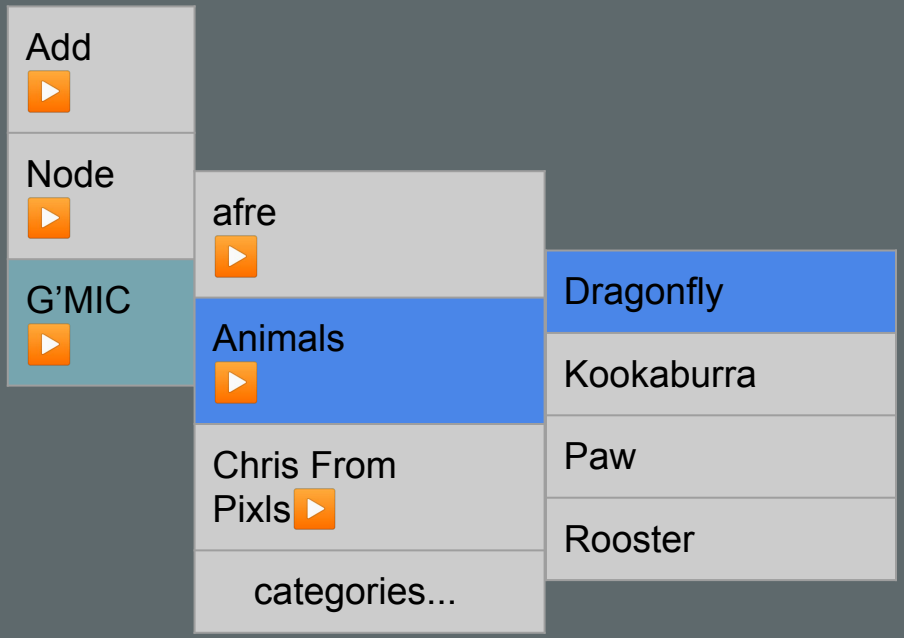
blender demo

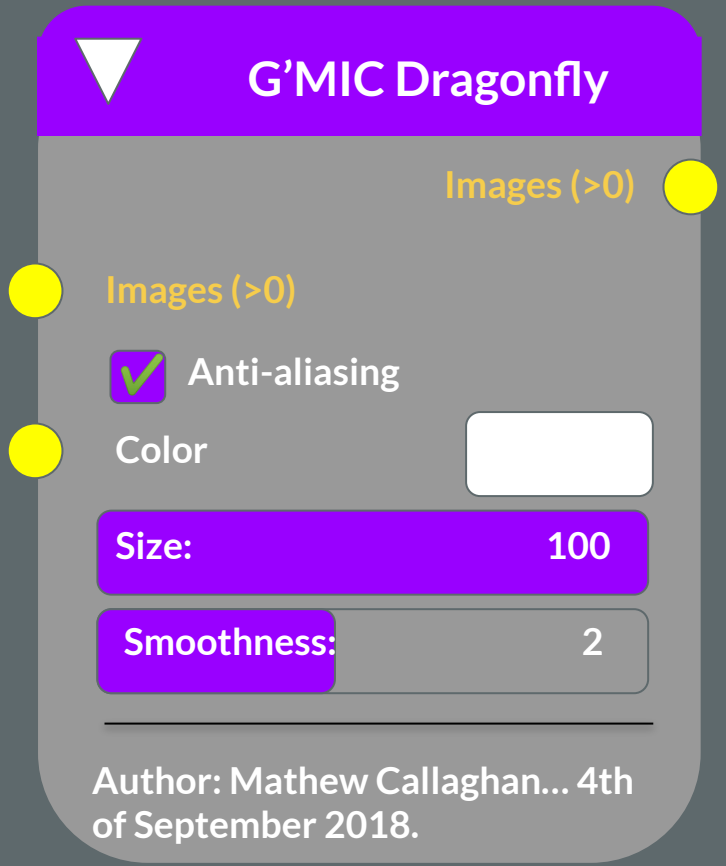


Gmic-blender add-on + using gmic-py in the Text editor

Compositing nodes UI wish

500 nodes in subcategories





gmic-blender architecture (A)

NO
BLENDER
C++ PATCH

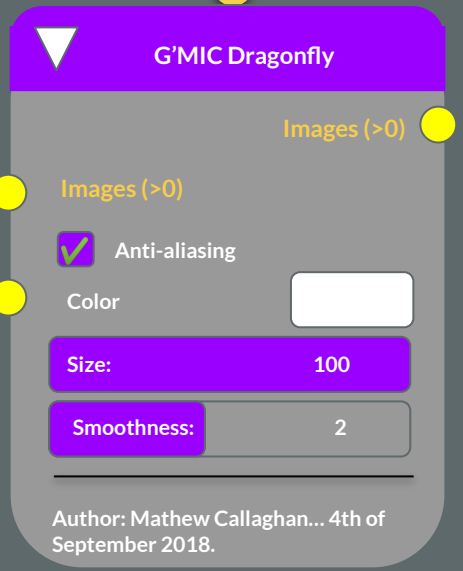
+

ADD-ON
Python
+binary libs

gmic-py

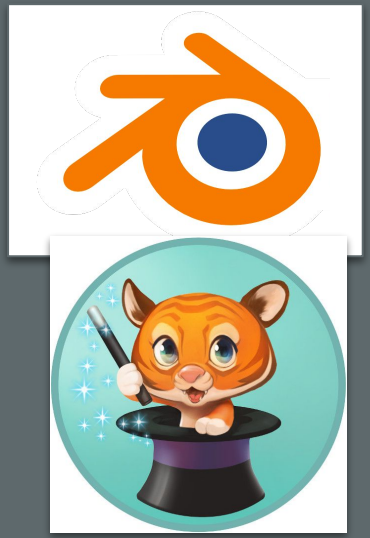
=

?



gmic-blender architecture (B)

EMBED LIBGMIC INTO BLENDER



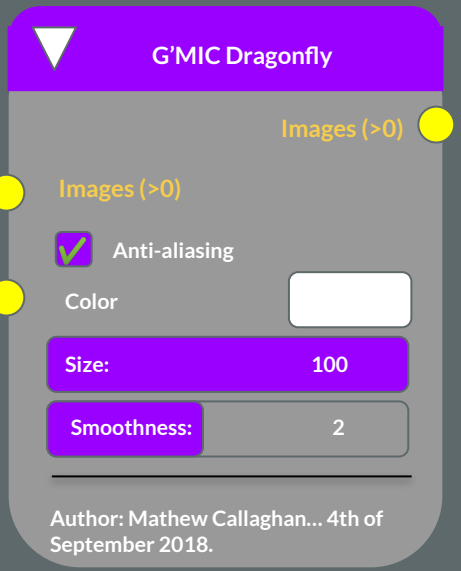
+

Bundled ADD-ON

G'MIC Python UI generation only

=

Freestyle-like?



OpenStreetMap | Edit | History | Export | GPS Traces | User Diaries | Copyright | Help | About | Log In | Sign Up

DREP ENSICAEN / Normandie Incubation, R

ɔlein, Winkelcentrum Boven 't IJ, Amsterdam,

Car (OSRM) | Go

Reverse Directions

Directions

Distance: 678km. Time: 7:24.

1. Start on **Rue Claude Bloch** 50m
2. At roundabout take 2nd exit onto unnamed road 40m
3. Exit roundabout onto unnamed road 10m
4. Continue on **Rue Claude Bloch** 140m
5. Continue on **Rue Professeur Joseph Rousselot** 200m
6. At roundabout take 1st exit onto **Avenue du Professeur André Maurice** 10m
7. Exit roundabout onto **Avenue du Professeur André Maurice** 140m
8. Turn left onto **Avenue de la Côte de Nacre** 300m
9. At roundabout take 3rd exit onto **N 814** 200m

Thank you!

gmic.eu

myselfhimself