

Vivimagic.ipynb

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DOWNLOAD libs_beautify_photo.zip from dropbox

```
[ ] !wget "https://www.dropbox.com/s/2yrzr98w1faxyi3/libs_beautify_photo.zip"
!unzip "/content/libs_beautify_photo.zip" && rm "/content/libs_beautify_photo.zip"
!rm -r "/content/_MACOSX"

inflating: libs/GPGAN/.github/workflows/no-response.yml
creating: libs/GPGAN/.git/objects/pack/
creating: libs/GPGAN/.git/objects/info/
inflating: libs/GPGAN/.git/info/exclude
inflating: libs/GPGAN/.git/logs/HEAD
creating: libs/GPGAN/.git/logs/refs/
inflating: libs/GPGAN/.git/hooks/commit-msg.sample
inflating: libs/GPGAN/.git/hooks/pre-rebase.sample
inflating: libs/GPGAN/.git/hooks/pre-commit.sample
inflating: libs/GPGAN/.git/hooks/applypatch-msg.sample
inflating: libs/GPGAN/.git/hooks/fsmonitor-watchman.sample
inflating: libs/GPGAN/.git/hooks/pre-receive.sample
inflating: libs/GPGAN/.git/hooks/prepare-commit-msg.sample
inflating: libs/GPGAN/.git/hooks/post-update.sample
inflating: libs/GPGAN/.git/hooks/pre-merge-commit.sample
inflating: libs/GPGAN/.git/hooks/pre-applypatch.sample
inflating: libs/GPGAN/.git/hooks/pre-push.sample
inflating: libs/GPGAN/.git/hooks/update.sample
inflating: libs/GPGAN/.git/hooks/push-to-checkout.sample
creating: libs/GPGAN/.git/refs/heads/
creating: libs/GPGAN/.git/refs/tags/
creating: libs/GPGAN/.git/refs/remotes/
inflating: libs/GPGAN/.inputs/whole_imgs/Blake_Lively.jpg
inflating: libs/GPGAN/.inputs/whole_imgs/10045.png
inflating: libs/GPGAN/.inputs/whole_imgs/00.jpg
inflating: libs/GPGAN/.inputs/cropped_faces/Justin_Timberlake_crop.png
inflating: libs/GPGAN/.inputs/cropped_faces/Paris_Hilton_crop.png
inflating: libs/GPGAN/.inputs/cropped_faces/Julia_Roberts_crop.png
inflating: libs/GPGAN/.inputs/cropped_faces/Adele_crop.png
inflating: libs/oeoldify/.git/objects/pack/pack-83cc32e49fa60a3a62be59a94731523994c0de51.pack
inflating: libs/oeoldify/.git/objects/pack/pack-83cc32e49fa60a3a62be59a94731523994c0de51.idx
creating: libs/oeoldify/.git/logs/refs/heads/
creating: libs/oeoldify/.git/logs/refs/remotes/
inflating: libs/oeoldify/.git/refs/heads/master
creating: libs/oeoldify/.git/refs/remotes/origin/
inflating: libs/GPGAN/.tests/data/gt/00000000.png
inflating: libs/GPGAN/.tests/data/fhq_gt.lmdb/lock.mdb
inflating: libs/GPGAN/.tests/data/fhq_gt.lmdb/data.mdb
inflating: libs/GPGAN/.tests/data/fhq_gt.lmdb/meta.info.txt
inflating: libs/GPGAN/.git/objects/pack/pack-11807e66286ac557c5a0de05dc6f086ca22a83c5.idx
inflating: libs/GPGAN/.git/objects/pack/pack-11807e66286ac557c5a0de05dc6f086ca22a83c5.pack
creating: libs/GPGAN/.git/logs/refs/heads/
creating: libs/GPGAN/.git/logs/refs/remotes/
inflating: libs/GPGAN/.git/refs/heads/master
creating: libs/GPGAN/.git/refs/remotes/origin/
inflating: libs/oeoldify/.git/logs/refs/heads/master
creating: libs/oeoldify/.git/logs/refs/remotes/origin/
inflating: libs/oeoldify/.git/refs/remotes/origin/HEAD
inflating: libs/GPGAN/.git/logs/refs/heads/master
creating: libs/GPGAN/.git/logs/refs/remotes/origin/
inflating: libs/GPGAN/.git/logs/refs/remotes/origin/HEAD
inflating: libs/oeoldify/.git/logs/refs/remotes/origin/HEAD
inflating: libs/GPGAN/.git/logs/refs/remotes/origin/HEAD
creating: models/
inflating: models/.DS_Store
inflating: _MACOSX/models/.DS_Store
inflating: models/ColorizeStable_gen.pth
```

Install pre-requisites

```
[ ] !pip install -r /content/colab_requirements.txt
!pip install basicsr==1.3.5

ERROR: Could not open requirements file: [Errno 2] No such file or directory: '/content/colab_requirements.txt'
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Collecting basicsr==1.3.5
  Downloading basicsr-1.3.5.tar.gz (161 kB)
    |████████| 161 kB 4.9 MB/s
Collecting addict
  Downloading addict-2.4.0-py3-none-any.whl (3.8 kB)
Requirement already satisfied: future in /usr/local/lib/python3.7/dist-packages (from basicsr==1.3.5) (0.16.0)
Requirement already satisfied: lmdb in /usr/local/lib/python3.7/dist-packages (from basicsr==1.3.5) (0.99)
Requirement already satisfied: numpy in /usr/local/lib/python3.7/dist-packages (from basicsr==1.3.5) (1.21.6)
Requirement already satisfied: opencv-python in /usr/local/lib/python3.7/dist-packages (from basicsr==1.3.5) (4.6.0.66)
Requirement already satisfied: Pillow in /usr/local/lib/python3.7/dist-packages (from basicsr==1.3.5) (7.1.2)
Requirement already satisfied: pyyaml in /usr/local/lib/python3.7/dist-packages (from basicsr==1.3.5) (6.0)
Requirement already satisfied: requests in /usr/local/lib/python3.7/dist-packages (from basicsr==1.3.5) (2.23.0)
Requirement already satisfied: scikit-image in /usr/local/lib/python3.7/dist-packages (from basicsr==1.3.5) (0.18.3)
Requirement already satisfied: scipy in /usr/local/lib/python3.7/dist-packages (from basicsr==1.3.5) (1.7.3)
Collecting tb-nightly
  Downloading tb_nightly-2.11.0a20220903-py3-none-any.whl (5.9 MB)
    |████████| 5.9 MB 49.6 MB/s
Requirement already satisfied: torch>=1.7 in /usr/local/lib/python3.7/dist-packages (from basicsr==1.3.5) (1.12.1+cu113)
Requirement already satisfied: torchvision in /usr/local/lib/python3.7/dist-packages (from basicsr==1.3.5) (0.13.1+cu113)
Requirement already satisfied: tqdm in /usr/local/lib/python3.7/dist-packages (from basicsr==1.3.5) (4.64.0)
Collecting yapf
  Downloading yapf-0.32.0-py2.py3-none-any.whl (190 kB)
    |████████| 190 kB 72.6 MB/s
Requirement already satisfied: typing_extensions in /usr/local/lib/python3.7/dist-packages (from torch>=1.7->basicsr==1.3.5) (4.1.1)
Requirement already satisfied: charset4>=3.0.2 in /usr/local/lib/python3.7/dist-packages (from basicsr==1.3.5) (3.0.4)
Requirement already satisfied: urllib3!=1.25.0,!=1.25.1,<1.26,>=1.21.1 in /usr/local/lib/python3.7/dist-packages (from requests->basicsr==1.3.5) (1.24.3)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.7/dist-packages (from basicsr==1.3.5) (2022.6.15)
Requirement already satisfied: idna<3,>=2.5 in /usr/local/lib/python3.7/dist-packages (from requests->basicsr==1.3.5) (2.10)
Requirement already satisfied: pywavelets>=1.1.1 in /usr/local/lib/python3.7/dist-packages (from scikit-image->basicsr==1.3.5) (1.3.0)
Requirement already satisfied: networkx>=2.0 in /usr/local/lib/python3.7/dist-packages (from scikit-image->basicsr==1.3.5) (2.6.3)
Requirement already satisfied: matplotlib>=3.0.0,>=2.0.0 in /usr/local/lib/python3.7/dist-packages (from scikit-image->basicsr==1.3.5) (3.2.2)
Requirement already satisfied: imageio>=2.3.0 in /usr/local/lib/python3.7/dist-packages (from scikit-image->basicsr==1.3.5) (2.9.0)
Requirement already satisfied: tifffile>=2019.7.26 in /usr/local/lib/python3.7/dist-packages (from scikit-image->basicsr==1.3.5) (2021.11.2)
Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.7/dist-packages (from matplotlib>=3.0.0,>=2.0.0->scikit-image->basicsr==1.3.5) (0.11.0)
Requirement already satisfied: pyparsing>=2.0.4,>=2.1.2,>=2.1.6,>=2.0.1 in /usr/local/lib/python3.7/dist-packages (from matplotlib>=3.0.0,>=2.0.0->scikit-image->basicsr==1.3.5) (3.0.9)
Requirement already satisfied: kiwisolver>=1.0.1 in /usr/local/lib/python3.7/dist-packages (from matplotlib>=3.0.0,>=2.0.0->scikit-image->basicsr==1.3.5) (1.4.4)
```

```
Requirement already satisfied: python-dateutil>=2.1 in /usr/local/lib/python3.7/dist-packages (from matplotlib!=3.0.0,>=2.0.0->scikit-image->basicsr==1.3.5) (2.8.2)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.7/dist-packages (from python-dateutil>=2.1->matplotlib!=3.0.0,>=2.0.0->scikit-image->basicsr==1.3.5) (1.15.0)
Requirement already satisfied: tensorflow-data-server<0.7.0,>=0.6.0 in /usr/local/lib/python3.7/dist-packages (from tb-nightly->basicsr==1.3.5) (0.6.1)
Requirement already satisfied: werkzeug<1.0.1 in /usr/local/lib/python3.7/dist-packages (from tb-nightly->basicsr==1.3.5) (1.0.1)
Requirement already satisfied: protobuf<1.20,>=3.9.2 in /usr/local/lib/python3.7/dist-packages (from tb-nightly->basicsr==1.3.5) (3.17.3)
Requirement already satisfied: google-auth<3,>=1.6.3 in /usr/local/lib/python3.7/dist-packages (from tb-nightly->basicsr==1.3.5) (1.35.0)
Requirement already satisfied: google-auth-oauthlib<0.5,>=0.4.1 in /usr/local/lib/python3.7/dist-packages (from tb-nightly->basicsr==1.3.5) (0.4.6)
Requirement already satisfied: markdown>=2.6.8 in /usr/local/lib/python3.7/dist-packages (from tb-nightly->basicsr==1.3.5) (3.4.1)
Requirement already satisfied: grpcio>=1.24.3 in /usr/local/lib/python3.7/dist-packages (from tb-nightly->basicsr==1.3.5) (1.47.0)
Requirement already satisfied: wheel>=0.26 in /usr/local/lib/python3.7/dist-packages (from tb-nightly->basicsr==1.3.5) (0.37.1)
Requirement already satisfied: tensorflow-plugin-wit>=1.6.0 in /usr/local/lib/python3.7/dist-packages (from tb-nightly->basicsr==1.3.5) (1.8.1)
Requirement already satisfied: absl-py>=0.4 in /usr/local/lib/python3.7/dist-packages (from tb-nightly->basicsr==1.3.5) (1.2.0)
Requirement already satisfied: setuptools>=41.0.0 in /usr/local/lib/python3.7/dist-packages (from tb-nightly->basicsr==1.3.5) (57.4.0)
Requirement already satisfied: rsa<5,>=3.1.4 in /usr/local/lib/python3.7/dist-packages (from google-auth<3,>=1.6.3->tb-nightly->basicsr==1.3.5) (4.9)
Requirement already satisfied: cachetools<5.0,>=2.0.0 in /usr/local/lib/python3.7/dist-packages (from google-auth<3,>=1.6.3->tb-nightly->basicsr==1.3.5) (4.2.4)
Requirement already satisfied: pyasn1-modules<0.2.1 in /usr/local/lib/python3.7/dist-packages (from google-auth<3,>=1.6.3->tb-nightly->basicsr==1.3.5) (0.2.8)
Requirement already satisfied: requests-oauthlib<0.7.0 in /usr/local/lib/python3.7/dist-packages (from google-auth-oauthlib<0.5,>=0.4.1->tb-nightly->basicsr==1.3.5) (4.12.0)
Requirement already satisfied: importlib-metadata>=4.4 in /usr/local/lib/python3.7/dist-packages (from markdown>=2.6.8->tb-nightly->basicsr==1.3.5) (4.12.0)
Requirement already satisfied: zipp>=0.5 in /usr/local/lib/python3.7/dist-packages (from importlib-metadata>=4.4->markdown>=2.6.8->tb-nightly->basicsr==1.3.5) (3.8.1)
```

Import required libraries sys, os, pytorch, fastai, deoldify, gfggan

Double-click (or enter) to edit

```
[ ] import sys
import os

sys.path.append('/content/libs/GFGGAN')
sys.path.append('/content/libs/DeOldify')

[ ] import torch
import fastai
from deoldify import device
from deoldify.visualize import *
from deoldify.device_id import DeviceId
from pathlib import Path
```

```
[ ] mkdir '/content/input'
mkdir '/content/high_resolution_output'
mkdir '/content/final_colorized_output'
mkdir '/content/final_colorized_output/from_original'
mkdir '/content/final_colorized_output/from_recontraction'
```

Upload and Image for restoration as well as colorization

```
[ ] lcd /content/libs/GFGGAN && python setup.py develop
lcd /content/libs/GFGGAN && python inference_gfggan.py -i ../../input -o ../../high_resolution_output -v 1.3 -s 2

running develop
running egg_info
creating gfggan.egg-info
writing gfggan.egg-info/PKG-INFO
writing dependency_links to gfggan.egg-info/dependency_links.txt
writing requirements to gfggan.egg-info/requirements.txt
writing top-level names to gfggan.egg-info/top_level.txt
writing manifest file 'gfggan.egg-info/SOURCES.txt'
reading manifest template 'MANIFEST.in'
warning: no files found matching 'inputs/**'
adding license file 'LICENSE'
writing manifest file 'gfggan.egg-info/SOURCES.txt'
running build_ext
Creating /usr/local/lib/python3.7/dist-packages/gfggan.egg-link (link to .)
Adding gfggan 1.3.2 to easy-install.pth file

Installed /content/Libs/GFGGAN
Processing dependencies for gfggan==1.3.2
Searching for yapf==0.32.0
Best match: yapf 0.32.0
Adding yapf 0.32.0 to easy-install.pth file
Installing yapf script to /usr/local/bin
Installing yapf-diff script to /usr/local/bin

Using /usr/local/lib/python3.7/dist-packages
Searching for tb-nightly==2.11.0a20220903
Best match: tb-nightly 2.11.0a20220903
Adding tb-nightly 2.11.0a20220903 to easy-install.pth file
Installing tensorflow script to /usr/local/bin

Using /usr/local/lib/python3.7/dist-packages
Searching for PyYAML==6.0
Best match: PyYAML 6.0
Adding PyYAML 6.0 to easy-install.pth file

Using /usr/local/lib/python3.7/dist-packages
Searching for lmdb==0.99
Best match: lmdb 0.99
Adding lmdb 0.99 to easy-install.pth file

Using /usr/local/lib/python3.7/dist-packages
Searching for faceclib==0.2.5
Best match: faceclib 0.2.5
Adding faceclib 0.2.5 to easy-install.pth file

Using /usr/local/lib/python3.7/dist-packages
Searching for basicsr==1.3.5
Best match: basicsr 1.3.5
Adding basicsr 1.3.5 to easy-install.pth file

Using /usr/local/lib/python3.7/dist-packages
Searching for tqdm==4.64.0
Best match: tqdm 4.64.0
Adding tqdm 4.64.0 to easy-install.pth file
Installing tqdm script to /usr/local/bin

Using /usr/local/lib/python3.7/dist-packages
```

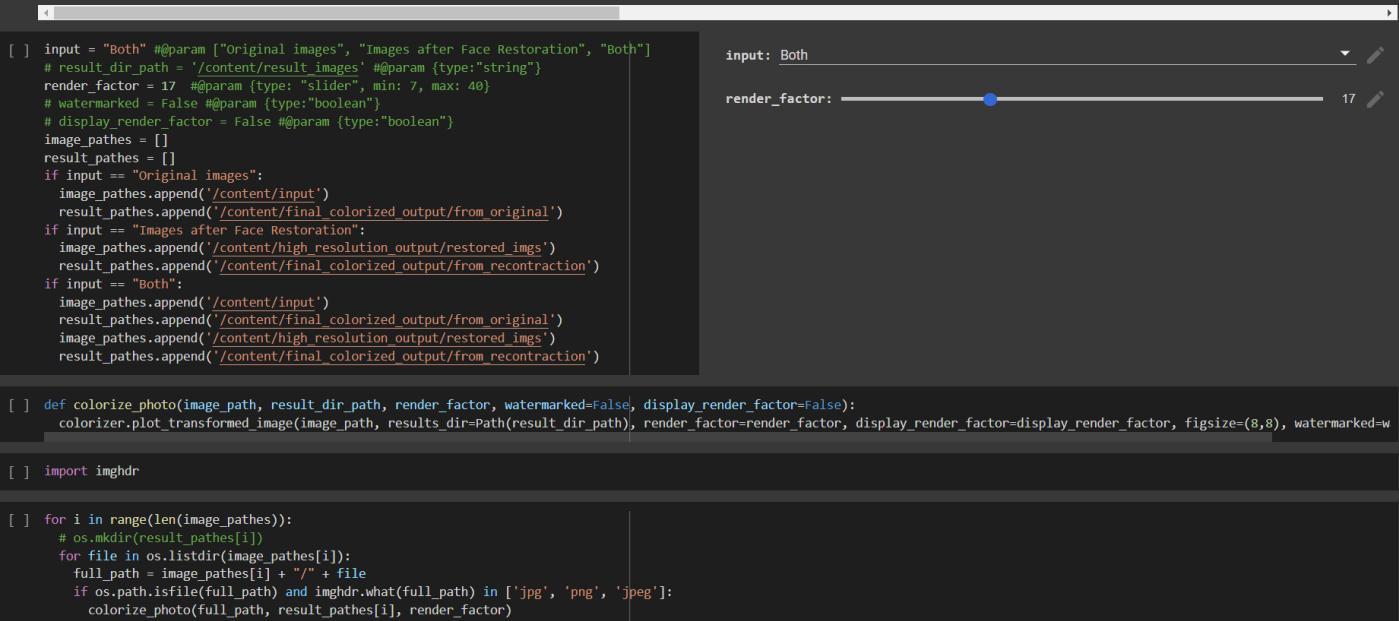
Colorize images

```
[ ] device.set(device=deviceId.GPU0)
  if not torch.cuda.is_available():
    print('GPU not available.')
  torch.backends.cudnn.benchmark = True

GPU not available.

[ ] colorizer = get_image_colorizer(artistic=False)

/usr/local/lib/python3.7/dist-packages/fastai/data_block.py:442: UserWarning: Your training set is empty. If this is by design, pass `ignore_empty=True` to remove this warning.
  warn("Your training set is empty. If this is by design, pass `ignore_empty=True` to remove this warning.")
/usr/local/lib/python3.7/dist-packages/fastai/data_block.py:445: UserWarning: Your validation set is empty. If this is by design, use `split_none()`
  or pass `ignore_empty=True` when labelling to remove this warning.
  or pass `ignore_empty=True` when labelling to remove this warning."")
/usr/local/lib/python3.7/dist-packages/torch/utils/data/dataloader.py:566: UserWarning: This DataLoder will create 8 worker processes in total. Our suggested max number of worker in cu
  cpuset_checked()
/usr/local/lib/python3.7/dist-packages/torchvision/models/_utils.py:136: UserWarning: using 'weights' as positional parameter(s) is deprecated since 0.13 and will be removed in 0.15. Pl
  f"Using {sequence_to_str(tuple_only_kw_args.keys(), separate_last='and ')} as positional "
/usr/local/lib/python3.7/dist-packages/torchvision/models.py:223: UserWarning: Arguments other than a weight enum or 'None' for 'weights' are deprecated since 0.13 and will be rei
  warnings.warn(msg)
Downloading: "https://download.pytorch.org/models/resnet101-63fe2227.pth" to /root/.cache/torch/hub/checkpoints/resnet101-63fe2227.pth
100% [██████████] 171M/171M [00:00:00.00, 207MB/s]
```



The screenshot shows a Jupyter Notebook interface. On the left, there are two code cells. The top cell contains code related to GPU availability and the loading of a pre-trained ResNet-101 model. The bottom cell contains code for a function named `colorize_photo`. On the right, there is a configuration panel with two sliders: one for `input` (set to "Both") and one for `render_factor` (set to 17).

```
[ ] device.set(device=deviceId.GPU0)
  if not torch.cuda.is_available():
    print('GPU not available.')
  torch.backends.cudnn.benchmark = True

GPU not available.

[ ] colorizer = get_image_colorizer(artistic=False)

/usr/local/lib/python3.7/dist-packages/fastai/data_block.py:442: UserWarning: Your training set is empty. If this is by design, pass `ignore_empty=True` to remove this warning.
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  or pass `ignore_empty=True` when labelling to remove this warning.
  or pass `ignore_empty=True` when labelling to remove this warning."")
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/usr/local/lib/python3.7/dist-packages/torchvision/models/_utils.py:136: UserWarning: using 'weights' as positional parameter(s) is deprecated since 0.13 and will be removed in 0.15. Pl
  f"Using {sequence_to_str(tuple_only_kw_args.keys(), separate_last='and ')} as positional "
/usr/local/lib/python3.7/dist-packages/torchvision/models.py:223: UserWarning: Arguments other than a weight enum or 'None' for 'weights' are deprecated since 0.13 and will be rei
  warnings.warn(msg)
Downloading: "https://download.pytorch.org/models/resnet101-63fe2227.pth" to /root/.cache/torch/hub/checkpoints/resnet101-63fe2227.pth
100% [██████████] 171M/171M [00:00:00.00, 207MB/s]

[ ] input = "Both" #@param ["Original images", "Images after Face Restoration", "Both"]
# result_dir_path = '/content/result_images' #@param {type:"string"}
render_factor = 17 #@param {type: "slider", min: 7, max: 40}
# watermarked = False #@param {type:"boolean"}
# display_render_factor = False #@param {type:"boolean"}
image_paths = []
result_paths = []
if input == "Original images":
  image_paths.append('/content/input')
  result_paths.append('/content/final_colorized_output/from_original')
if input == "Images after Face Restoration":
  image_paths.append('/content/high_resolution_output/restored_imgs')
  result_paths.append('/content/final_colorized_output/from_recontraction')
if input == "Both":
  image_paths.append('/content/input')
  result_paths.append('/content/final_colorized_output/from_original')
  image_paths.append('/content/high_resolution_output/restored_imgs')
  result_paths.append('/content/final_colorized_output/from_recontraction')

[ ] def colorize_photo(image_path, result_dir_path, render_factor, watermarked=False, display_render_factor=False):
  colorizer.plot_transformed_image(image_path, results_dir=Path(result_dir_path), render_factor=render_factor, display_render_factor=display_render_factor, figsize=(8,8), watermark=w
  atered=False, display_watermark=False)
```

```
[ ] import imghdr
```

```
[ ] for i in range(len(image_paths)):
  # os.makedirs(result_paths[i])
  for file in os.listdir(image_paths[i]):
    full_path = image_paths[i] + "/" + file
    if os.path.isfile(full_path) and imghdr.what(full_path) in ['jpg', 'png', 'jpeg']:
      colorize_photo(full_path, result_paths[i], render_factor)
```



▼ Ziped result

```
[ ] !zip -r "colorized_output.zip" "/content/final_colorized_output"
```

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