

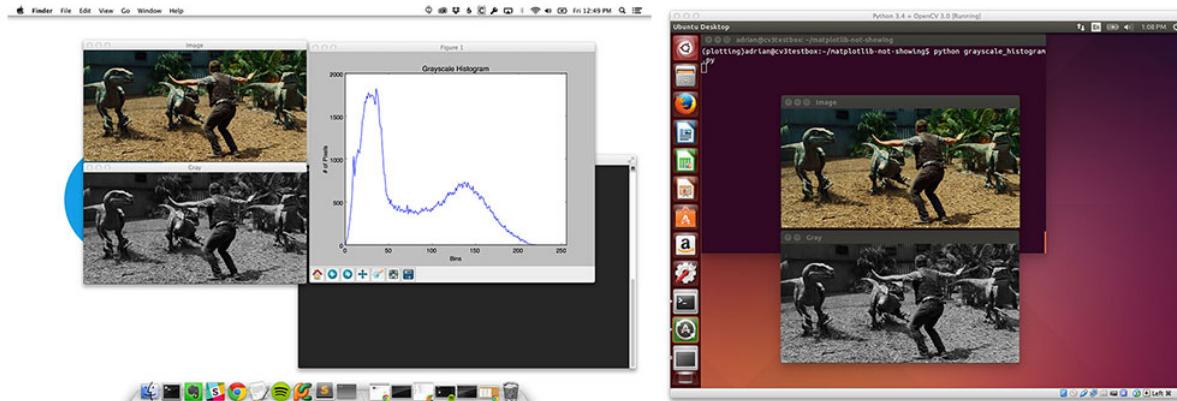
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Resolved: Matplotlib figures not showing up on OSX Our plot shows up on OSX... but not Ubuntu?

by [Adrian Rosebrock](#)



(https://pyimagesearch.com/wp-content/uploads/2015/07/matplotlib_osx_vs_ubuntu.jpg)

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(<https://virtualenvwrapper.readthedocs.org/en/latest/>) packages.

The issue actually stems from the [matplotlib backend](#) (http://matplotlib.org/faq/usage_faq.html#what-is-a-backend) not being properly set, or from a missing dependency when compiling and installing matplotlib. Luckily, after a lot of trial and error (and spending an entire day trying to come up with a solution), I have been able to resolve the problem and get matplotlib figures to show up and display on my screen on both the Ubuntu and Raspbian operating systems (and when using Python virtual environments).

While this post is not exactly related to computer vision or OpenCV, I still want to share my experience and solution with other PyImageSearch readers. Matplotlib is a heavily used package in the Python scientific community and I hope that this article helps other readers resolve this strange and hard to pinpoint issue.

Setting the stage

Let's go ahead and set the stage.

- We're using a Debian based operating system such as Ubuntu or Raspbian.
- We're (optionally) utilizing Python virtual environments via virtualenv and virtualenvwrapper.
- And our goal is to take the following image (*left*) and compute a grayscale pixel intensity histogram for it using matplotlib (*right*):

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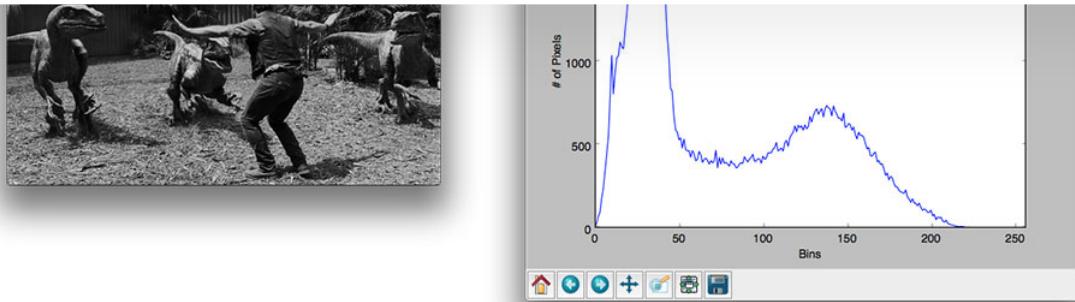
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[\(https://pyimagesearch.com/wp-content/uploads/2015/07/matplotlib_histogram_example.jpg\)](https://pyimagesearch.com/wp-content/uploads/2015/07/matplotlib_histogram_example.jpg)

Figure 1: Our end goal is to utilize matplotlib to display a grayscale pixel intensity for the image on the left.

Since we are using [matplotlib \(http://matplotlib.org/\)](http://matplotlib.org/), let's create a new virtual environment called `plotting` :

Resolved: Matplotlib figures not showing up or displaying

```
1. | $ mkvirtualenv plotting
```

Now that we're in the `plotting` environment, let's install `numpy` , `scipy` , and `matplotlib` :

Resolved: Matplotlib figures not showing up or displaying

```
1. | $ pip install numpy
2. | $ pip install scipy
3. | $ pip install matplotlib
```

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```
13. | hist = cv2.calcHist([gray], [0], None, [256], [0, 256])
14.
15. | # plot the histogram
16. | plt.figure()
17. | plt.title("Grayscale Histogram")
18. | plt.xlabel("Bins")
19. | plt.ylabel("# of Pixels")
20. | plt.plot(hist)
21. | plt.xlim([0, 256])
22. | plt.show()
23. | cv2.waitKey(0)
```

The code here is fairly straightforward. **Lines 1 and 2** import `matplotlib` and `cv2`. We then load our image and convert it to grayscale (**Lines 4-9**). From there the `cv2.calcHist` function is used to compute a histogram over the grayscale pixel intensities. Finally, **Lines 14-22** plot the histogram using `matplotlib`.

To execute our script, all we need to do is fire up and shell and issue the following command:

```
Resolved: Matplotlib figures not showing up or displaying
1. | $ python grayscale_histogram.py
```

When I execute the code on my OSX machine in the `plotting` virtual environment, the histogram is computed and both the grayscale image and histogram are displayed to my screen:

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Figure 2: Using OSX, I can successfully plot and display my grayscale histogram using matplotlib.

However, when I go over to my Ubuntu 14.04 machine and execute *the exact same code* all I see are my images:

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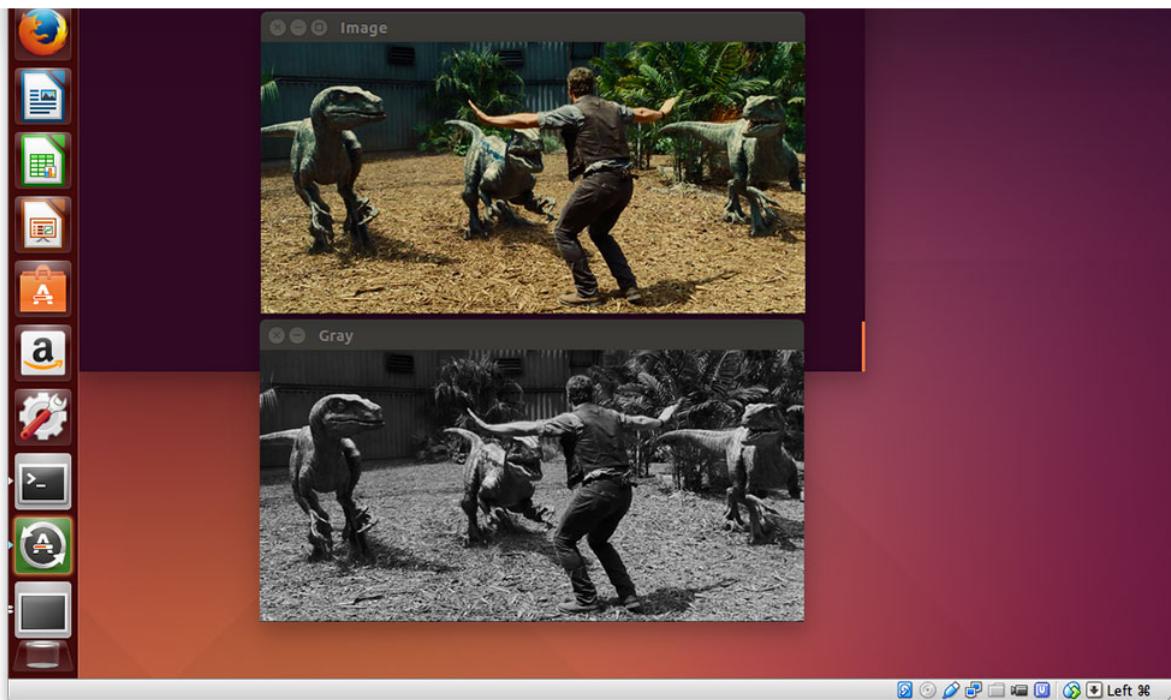
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Figure 3: I have executed the exact same code on my Ubuntu system in the plotting virtual environment. All I see are my images — *where did my histogram go?* Why is there no error message?

Which leads to the question: “**Where is the histogram?**”

As we can see from the terminal output, the script executed just fine. No errors were displayed. No warning messages printed to my console. **But yet there is not plot!**

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```
2. | Python 3.4.0 (default, Apr 11 2014, 13:05:11)
3. | [GCC 4.8.2] on linux
4. | Type "help", "copyright", "credits" or "license" for more information.
5. | >>> import matplotlib
6. | >>> matplotlib.get_backend()
7. | 'agg'
```

On my Ubuntu machine this gives me a value of `agg` ; however, through my testing and debugging, this value needs to be `TkAgg` for the TkInter windowing system (at least when using Ubuntu and Raspbian).

Luckily, we can resolve this issue by using `apt-get` to install a few libraries:

```
Resolved: Matplotlib figures not showing up or displaying
1. | $ sudo apt-get install tcl-dev tk-dev python-tk python3-tk
```

But we're not quite done yet. In order to get matplotlib to recognize the TkInter GUI library, we need to:

- **Step 1:** Access our `plotting` virtual environment via `workon plotting` .
- **Step 2:** Use pip to ***uninstall*** `matplotlib` (since we installed it via pip earlier in this article).
- **Step 3:** Pull down [matplotlib from the GitHub repo](https://github.com/matplotlib/matplotlib.git) (<https://github.com/matplotlib/matplotlib.git>).
- **Step 4:** Install `matplotlib` from source using `setup.py` .

I can accomplish these steps using the following commands:

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```
2. | Python 3.4.0 (default, Apr 11 2014, 13:05:11)
3. | [GCC 4.8.2] on linux
4. | Type "help", "copyright", "credits" or "license" for more information.
5. | >>> import matplotlib
6. | >>> matplotlib.get_backend()
7. | 'TkAgg'
```

Sure enough, we now see the `TkAgg` is being used as the `matplotlib` backend.

Note: You can explicitly instruct `matplotlib` to use the `TkAgg` backend by making a call to `matplotlib.use("TkAgg")`; however, this won't do you much good if the `TkInter` dependencies are not installed.

And now when we execute our `grayscale_histogram.py` script, just like above:

```
Resolved: Matplotlib figures not showing up or displaying
1. | $ python grayscale_histogram.py
```

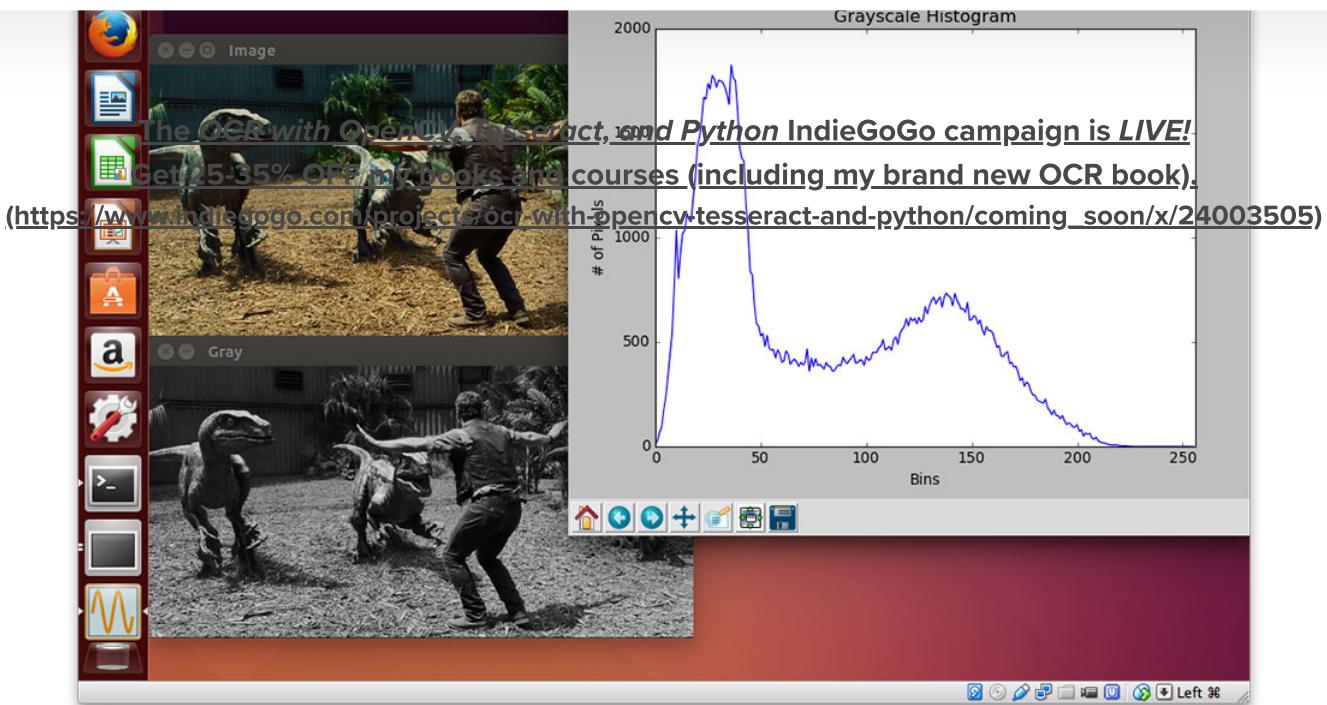
We should now see both our grayscale image along with our histogram:

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Figure 4: Success! Our matplotlib figure is now showing up! All we need to do was change the matplotlib backend.

We have now fixed our issue — matplotlib figures are successfully being displayed on our screen!

Granted, this solution is a bit of a pain in the ass, but it's fairly straightforward and gets the job done. If you have any other suggestions or comments, please feel free to leave them in the comments section.

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The astute Debian user may be wondering why I didn't simply install `matplotlib` via `apt-get`, like this:

```
Resolved: Matplotlib figures not showing up or displaying
1. | $ sudo apt-get install python-matplotlib
```

The reason is because I'm a ***heavy user of Python virtual environments*** and strictly believe in keeping my Python environments sequestered and independent of each other. If you use `apt-get` to install `matplotlib` you lose control over what version of `matplotlib` you want to install — you simply have to use with whatever version is in the `apt-get` repository. This also muddles your system install of Python which I try to keep as clean as possible.

All that said, every time I have installed `matplotlib` via `apt-get` all of my dependencies were correctly installed and I was able to display my figures without a problem, so if you do not care about Python virtual environments, then the `apt-get` solution is a good way to go. But again, I really recommend using virtual environments.

Summary

In this blog post I detailed how to resolve a pesky issue where `matplotlib` figures are not displayed to your screen. Symptoms of this problem include clean script execution (i.e. no error messages and no warnings) printed to your terminal, and yet your plot is not displayed. I have regularly encountered this problem when using Debian based operating systems such as Ubuntu and Raspbian. The problem is only further compounded when using Python virtual environments.

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```
1 # construct the new head model that will be  
2 # placed on top of the  
3 # the base model  
4 headModel = baseModel.output  
5  
6 headMod  
7 activation  
8 headMod  
9 headMod  
10 activation  
11  
12 # place th  
13 model (th  
14 # the act  
15 model = f  
16 outputs=  
17  
18 # loop ov  
19 them so t
```

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Dr. Adrian Rosebrock

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About the Author

Hi there, I'm Adrian Rosebrock, PhD. All too often I see developers, students, and researchers wasting their time, studying the wrong things, and generally struggling to get started with Computer Vision, Deep Learning, and OpenCV. I created this website to show you what I believe is the best possible way to get your start.

[Previous Article:](#)

The perfect computer vision environment: PyCharm, OpenCV, and Python virtual environments

(<https://www.pyimagesearch.com/2015/08/17/the-perfect-computer-vision-environment-pycharm-opencv-and-python-virtual-environments/>)

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Thomas Caswell

September 7, 2015 at 12:30 pm (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-355089>)

You can control which backend is used via the `matplotlibrc` file and you should not need to install from source to get the TkAgg backend to work in a venv.

Interestingly, this is the inverse of the perennial SO question of ‘how do I make plots without opening a gui window’



Adrian Rosebrock

September 8, 2015 at 7:30 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-355506>)

You can control the backend via the `.matplotlib` file and the `matplotlib.use()` function. However, that will not help if the backend is not actually installed. The most important step is to grab the dependencies via `apt-get`, at which point you *could* just set the backend manually, but a re-compile from source will automatically pick them up, which I find preferable.



Hilman



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This blog post is for **Ubuntu**, not OSX — hence the `apt -get` command is not part of OSX. Are you having trouble displaying matplotlib plots on OSX?

**Hilman**

[January 30, 2016 at 12:28 am](https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-388452) (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-388452>)

Yes. I believe it is because of the virtual environment has some conflicts with the matplotlib.

**Adrian Rosebrock**

[January 30, 2016 at 12:01 pm](https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-388489) (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-388489>)

Indeed, there are some issues with the latest version of matplotlib and Python virtual environments. There are a few workarounds, but by far the easiest is to use an earlier version of matplotlib:

```
$ workon plotting
$ pip uninstall matplotlib
$ git clone https://github.com/matplotlib/matplotlib.git
$ cd matplotlib
$ git checkout v1.4.3
```



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What should I do?

Thanks in advance.



Adrian Rosebrock

January 31, 2016 at 8:58 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-388567>)

Can you share your full output using GitHub Gists or PasteBin? It's hard to diagnose what the error message is without seeing the full trace.



Hilman

February 1, 2016 at 7:19 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-388640>)

Like this?:

<https://gist.github.com/hilman-dayo/39648eb29704ab560c47>
[\(https://gist.github.com/hilman-dayo/39648eb29704ab560c47\)](https://gist.github.com/hilman-dayo/39648eb29704ab560c47)



Adrian Rosebrock

February 2, 2016 at 10:38 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-388757>)

Yes, that helps with the formatting a lot. I did a quick search and it seems like this might be

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Displaying correctly now properly, still didn't have problem but didn't have solution, and I returned to this blog, and everything works now fine.

**matt**

April 9, 2016 at 8:40 pm (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-394545>)

5 stars blogpost,
very usefull

thanks!!

**Adrian Rosebrock**

April 13, 2016 at 7:09 pm (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-394857>)

Thanks Matt! 😊

**Dirk Reese**

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Adrian Rosebrock

May 10, 2016 at 8:03 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-397250>)

I tend to create different virtual environments for each of my projects. Since this blog post was not 100% specific to OpenCV (and users *not* using OpenCV could have the same problem), I didn't use the cv virtual environment.

In reality, you can create and name a virtual environment whatever you want. To get the OpenCV bindings into a name virtual environment, just sym-link the cv2.so (and optionally cv.py) files into the site-packages of the virtual environment — in fact, this is exactly what I did for the plotting virtual environment.



UriMcFly

June 8, 2016 at 10:59 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-399903>)

Hi, I'm doing a python project and I'm having a similar issue.

First of all I was doing this project on a PC-Duino (SO ubuntu 12.04), my code ran fine all the time and my core functions are imread() to read a png image, plt.show() to display this image, and after adding some patches on runtime finally use plt.draw() to see these patches in 'real-time'.



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computer. This is annoying.

Any idea?

Thanks!



Adrian Rosebrock

June 9, 2016 at 5:23 pm (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-399978>)

That is quite the strange error! I'm honestly not sure as I don't use the `plt.draw()` function, but if I come across anything, I'll let you know.



Prashant Dandriyal

June 3, 2019 at 3:11 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-520597>)

I may be too late to reply to this already resolved issue, but I believe that people like me really appreciate your efforts Adrian and would eventually, come here for a similar issue related to "Unable to plot using matplotlib on windows 10"

This is how I worked it out ...

In my case (Windows 10 + python 3.7), just after

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**Adrian Rosebrock**

June 6, 2019 at 8:04 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-521030>)

Thanks for sharing!

**XuanToa**

June 15, 2016 at 8:51 pm (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-400345>)

Hi Adrian,

Thanks for this solution.

However, It only works for grayscale histogram to me. It doesn't work for color histograms.

**Adrian Rosebrock**

June 18, 2016 at 8:28 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-400520>)

This code only computes grayscale histograms. Computing color histograms requires different

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Adrian Rosebrock

June 25, 2016 at 1:42 pm (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-401010>)

Congrats Rafael! 😊



Henk Schuurman

July 15, 2016 at 8:49 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-402210>)

on a Raspberry Pi 3 I tried to run this in the python interpreter in (cv); got no errors, but the command:

plt.figure()

responses with

nothing on the screen, so I think it plots beyond the vga memory.

What to do?



Adrian Rosebrock

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able to import matplotlib in python how can i solve this?
I created plotting virtual environment but it doesn't solve it

**Adrian Rosebrock**

August 17, 2016 at 11:57 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-404486>)

If you are using the cv virtual environment, then follow the same steps detailed in this tutorial.
Just use:

```
$ workon cv
```

To access the cv virtual environment instead of the plotting virtual environment.

**vivek borse**

August 29, 2016 at 5:34 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-405101>)

hi Adrian i follow this tutorial in cv environment.so plotting environment is running so that can we use cv and matplotlib in plotting environment?



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You saved the day Adrian,

I wasn't able to see the plot at first but remembered reading this post after which the plot showed up nicely.. Thanks!

**Adrian Rosebrock**

April 24, 2017 at 9:57 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-423595>)

Fantastic, I'm happy to hear it Bert!

**Dumitru Popa**

April 24, 2017 at 4:56 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-423555>)

Hello, it is possible to include image near histogram in Tkinter ? Thank you.

**Adrian Rosebrock**

April 24, 2017 at 9:31 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-423595>)



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Collecting matplotlib

Downloading matplotlib-2.0.0.tar.gz (53.2MB)

...

MemoryError



Adrian Rosebrock

April 28, 2017 at 9:56 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-424017>)

Try using the `--no-cache-dir` option:

```
$ pip install matplotlib --no-cache-dir
```



Putri

April 28, 2017 at 9:10 pm (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-424068>)

hi adrian i am using raspberry pi 3, opencv3, and python 2.7.9

```
>>> matplotlib.get_backend()
```

X

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**Zaso**

May 8, 2017 at 9:56 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-424740>)

Hi adrian,im using same setup and backend GTK3Agg and figure is white but when i go over with cursos,i can see x,y values. im on monitor via hdmi on Raspberry 3 Pi

**Adrian Rosebrock**

May 8, 2017 at 12:15 pm (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-424760>)

Hi Zaso — that is indeed strange, I'm sorry to hear about the matplotlib issue. However, I must admit that I'm not sure what the exact error is. I would suggest posting on the GitHub Issues page for the matplotlib repo.

**Leonardo**

May 7, 2017 at 7:13 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-424671>)

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The matplotlib can will block execution of the script until you close the window. Call cv2.imshow before plt.show and it should resolve the issue.

**Rogeri**

May 24, 2017 at 6:43 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-425917>)

Thanks for your post, It saves me a lot of time.

**Adrian Rosebrock**

May 25, 2017 at 4:19 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-425960>)

Thanks Rogeri, I'm glad to hear it 😊

**Toshio Futami**

March 16, 2018 at 10:29 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-453255>)



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Installing SciPy on the Raspberry Pi will take quite a bit of time. I would suggest starting the install and letting it run overnight.

**Alex C**

March 31, 2018 at 4:16 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-454738>)

Thanks a lot for the post – very helpful! I ended up simply needing to change the backend by using `rcParams.update()`, but until I saw this post I had no idea where to start to make my figure appear!

**Adrian Rosebrock**

April 4, 2018 at 12:43 pm (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-45511>)

Congrats on resolving the matplotlib issue, Alex!

**Elias**

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Now I am trying

```
>>> matplotlib.get_backend()  
'agg'
```

The matplotlibrc file seems to be not created at installation, because there is no file in '/home/pi/.config/matplotlib/'. Do you know how to fix this problem? I tried to copy the matplotlibrc.template file from the Git to this directory but without success.

Thank you for your answer.



Elias

May 14, 2018 at 2:45 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-461440>)

I solved the problem by copying the matplotlibrc.template file to '/home/pi/.virtualenvs/cv/lib/python3.5/site-packages/matplotlib-2.2.2+1059.g8a29c4059-py3.5-linux-armv7l.egg/matplotlib/mpl-data' which was the result of

```
>>> matplotlib.matplotlib_fname()
```

Furthermore I had to change the filename to 'matplotlibrc' and line 40 (in my case) of its code to backend : TkAgg

Nevertheless it would be interesting why there is no rc file added automatically.



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hi, Adrian.

When I run mkvirtualenv cv2 this command , it's point that command can not found. so I use pip to install virtualenv and virtualenvwrapper , it didn't successful, and it's also point that matplotlib 2.2.2 has requirement numpy >=1.7.1, but you'll have numpy 1.6.1 which is incompatible . I failed to upgrade numpy1.6.1 to 1.7.1.

Can you give me some advice ? Thank you



Adrian Rosebrock

May 22, 2018 at 5:51 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-463312>)

Hey Liujie — you mentioned that both virtualenv and virtualenvwrapper failed to install. I would suggest starting there and resolving that issue before you move forward.



Sruthi

June 19, 2018 at 5:21 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-468486>)

Hi Adrian,



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Which version of matplotlib do you have installed currently?

**Sruthi**

June 21, 2018 at 4:48 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-468781>)

Hi Adrian,

When I do `matplotlib.get_backend()`,

I get 'TkAgg'

But still I couldn't get the plots

So I uninstalled and reinstalled matplotlib after installing the dependencies as you suggested, but still no plot.

I am using ubuntu 16.04, python 3.5.2.

`matplotlib.__version__` gives version as '2.2.2+1330.gaf7a74b'

**Adrian Rosebrock**

June 21, 2018 at 5:30 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-468786>)

Can you try using an older version of matplotlib and see if that resolves the issue?



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**Adrian Rosebrock**

September 5, 2018 at 8:30 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-476672>)

I don't have a lot of experience with the pycocotools library so I'm honestly not sure what their dependencies are or what they are trying to do with matplotlib. I would suggest posting on their GitHub issues page.

**Rin**

September 5, 2018 at 4:29 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-476632>)

Hi Adrain,

Thanks alot for this article! My issue is, I have this line: pycocotools.coco import COCO. And from terminal:

The backend was *originally* set to 'agg' by the following code:

File "coco0309.py", line 3, in
from pycocotools.coco import COCO

I tried inserting the line `matplotlib.use("TkAgg")` before that line and then after that line as well but



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Is it possible to do this without using TkAgg? Thanks alot for doing this for us!!!

**KVS Setty**

September 27, 2018 at 8:16 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-479957>)

Hello Adrain,

Thanks for the tutorial,

Here I would like to share a different experience here I had, I ran the above script on my Windows system and didn't get the display of histogram and

first I thought the problem is similar to Linux system, but after making the gray scale image and tapping some key, the histogram window displayed, then I realized that the reason is because of the `waitKey(0)` command , which did not

allow the execution of the code further down till I tap some key. And I was laughing out myself for my first thoughts (ie ,thinking some issues similar to Linux and I am going to have a tough time to resolve, thank God , nothing like that required).

I really appreciate your time effort in making such wonderful tutorials and making me to think for next system (third one) to be a Linux. By the way right now, I work on both Windows and Mac Pro systems and shortly a Linux system will be added and this is going to be used only for ML and DL projects on the domains like CV, NLP, Speech and Data Analytics.

X

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**Satya**

February 3, 2019 at 6:33 pm (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-499371>)

How did you ever track this down. Great job.

**unnamed**

June 7, 2019 at 4:01 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-521142>)

Thanks a lot for posting this.

**Adrian Rosebrock**

June 12, 2019 at 1:56 pm (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-521701>)

You are welcome!



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**Bojan Komazec**

January 28, 2020 at 6:12 pm (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-684676>)

Many thanks for this post Adrian. I just wanted to share my experience with matplotlib in venv.

I followed the instructions but didn't manage to make the latest matplotlib (3.2.0rc2+1298.g58c66982d) to use GTK3Agg in virtual env. I tried both installing from source and via pip, matplotlib.get_backend() would always return agg. But as soon as I installed matplotlib version you suggested (1.4.3, via pip), it started picking up GTK3Agg backend and showing UI windows. I am on Ubuntu 18.04, using Python 3.6 in virtual env.

**Adrian Rosebrock**

January 30, 2020 at 8:42 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-688996>)

Thanks for sharing, Bojan!

**Akshay**

February 19, 2020 at 5:52 am (<https://www.pyimagesearch.com/2015/08/24/resolved-matplotlib-figures-not-showing-up-or-displaying/#comment-742231>)



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Awesome, thanks for the explanation.

I just want to know if the similar approach can be implemented in Docker environment to pop up the matplotlib plots.

I have been trying to do some plotting inside a docker container, since docker container is headless (no GUI) I am not able see any plots. I can save the plotted images, however I would like to see it instantly as I am planning for dynamic plot.

Thank you,
Kishor

Before you leave a comment...

Hey, Adrian here, author of the PyImageSearch blog. I'd love to hear from you; however, I have made the decision to no longer offer free 1:1 help over blog post comments. I simply do not have the time to moderate and respond to them all.

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