In [1]:
```
import numpy as np
```

In [3]:
```
ones_arr=np.ones((5,5),dtype=int)
```

In [5]:
```
ones_arr
```

Out[5]:
```
array([[1, 1, 1, 1, 1],
       [1, 1, 1, 1, 1],
       [1, 1, 1, 1, 1],
       [1, 1, 1, 1, 1],
       [1, 1, 1, 1, 1]])
```

In [7]:
```
ones_arr*255
```

Out[7]:
```
array([[255, 255, 255, 255, 255],
       [255, 255, 255, 255, 255],
       [255, 255, 255, 255, 255],
       [255, 255, 255, 255, 255],
       [255, 255, 255, 255, 255]])
```

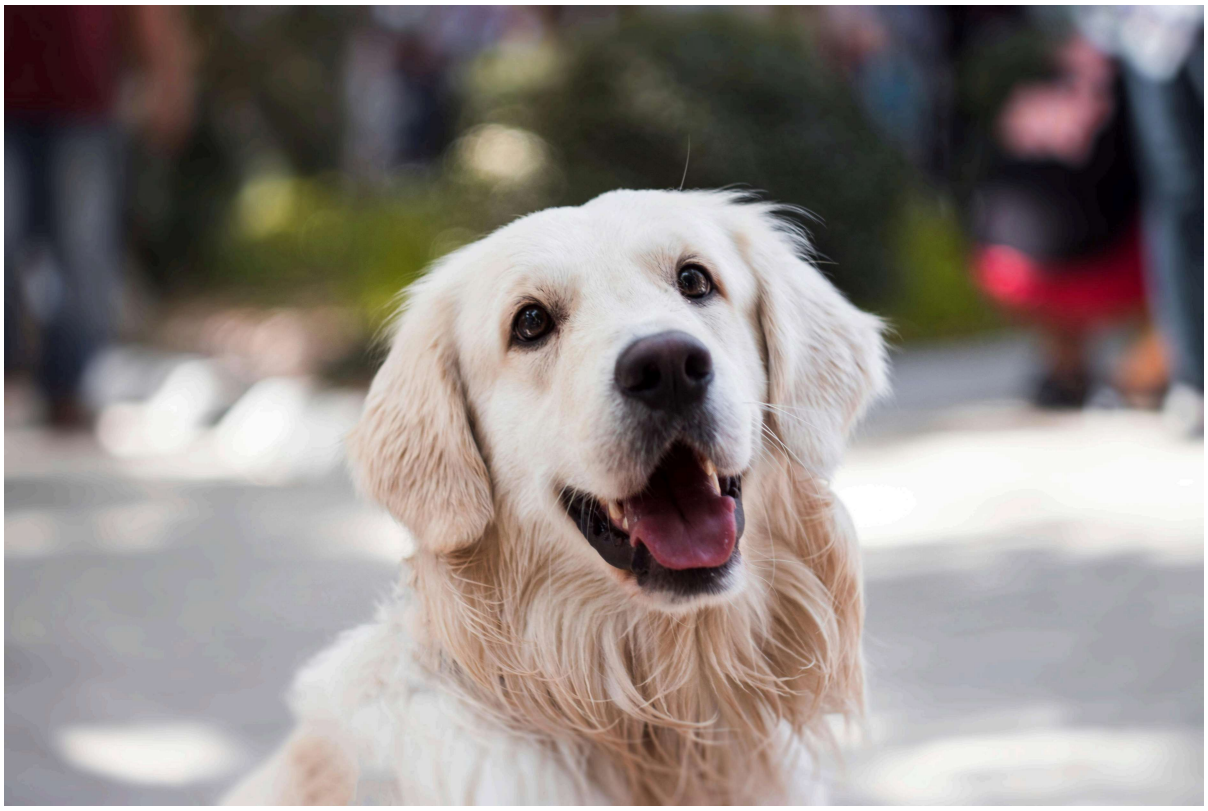
In [9]:
```
import matplotlib.pyplot as plt
```

In [11]:
```
from PIL import Image
```

In [13]:
```
dog=Image.open(r"C:\Users\HP\OneDrive\Downloads\dog.jpg")
```

In [17]:
```
dog
```

Out[17]:



In [19]:
```
type(dog)
```

Out[19]:
```
PIL.JpegImagePlugin.JpegImageFile
```

In [21]:
```
dog_arr=np.asarray(dog)
dog_arr
```

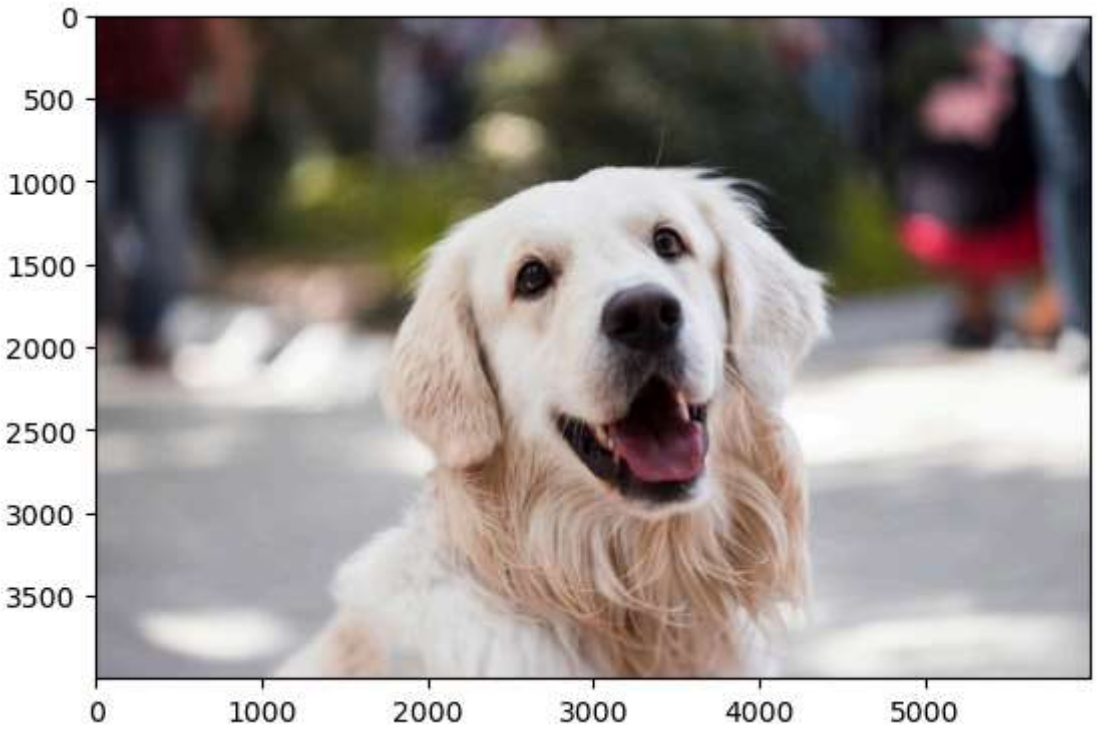
Out[21]:
```
array([[[ 44,  12,  17],
        [ 44,  12,  17],
        [ 44,  12,  17],
        ...,
        [169, 178, 193],
        [169, 178, 193],
        [168, 177, 192]],

       [[ 44,  12,  17],
        [ 44,  12,  17],
        [ 44,  12,  17],
        ...,
        [169, 178, 193],
        [168, 177, 192],
        [168, 177, 192]],

       [[ 44,  12,  17],
        [ 44,  12,  17],
        [ 44,  12,  17],
        ...,
        [168, 177, 192],
        [168, 177, 192],
        [168, 177, 192]],

       ...,

       [[139, 137, 148],
        [139, 137, 148],
        [139, 137, 148],
        ...,
        [187, 188, 190],
        [187, 188, 190],
        [187, 188, 190]],

       [[139, 137, 148],
        [139, 137, 148],
        [139, 137, 148],
        ...,
        [187, 188, 190],
        [187, 188, 190],
        [187, 188, 190]],

       [[139, 137, 148],
        [139, 137, 148],
        [139, 137, 148],
        ...,
        [187, 188, 190],
        [187, 188, 190],
        [187, 188, 190]]], dtype=uint8)
```

In [23]:
```
type(dog_arr)
```

Out[23]:
```
numpy.ndarray
```

In [25]:
```
plt.imshow(dog_arr)
```

Out[25]: <matplotlib.image.AxesImage at 0x23c732fb380>



In [27]:
```
dog_arr.shape
```

Out[27]: (4000, 6000, 3)

In [29]:
```
dog_red=dog_arr.copy()
```

In [31]:
```
dog_red
```

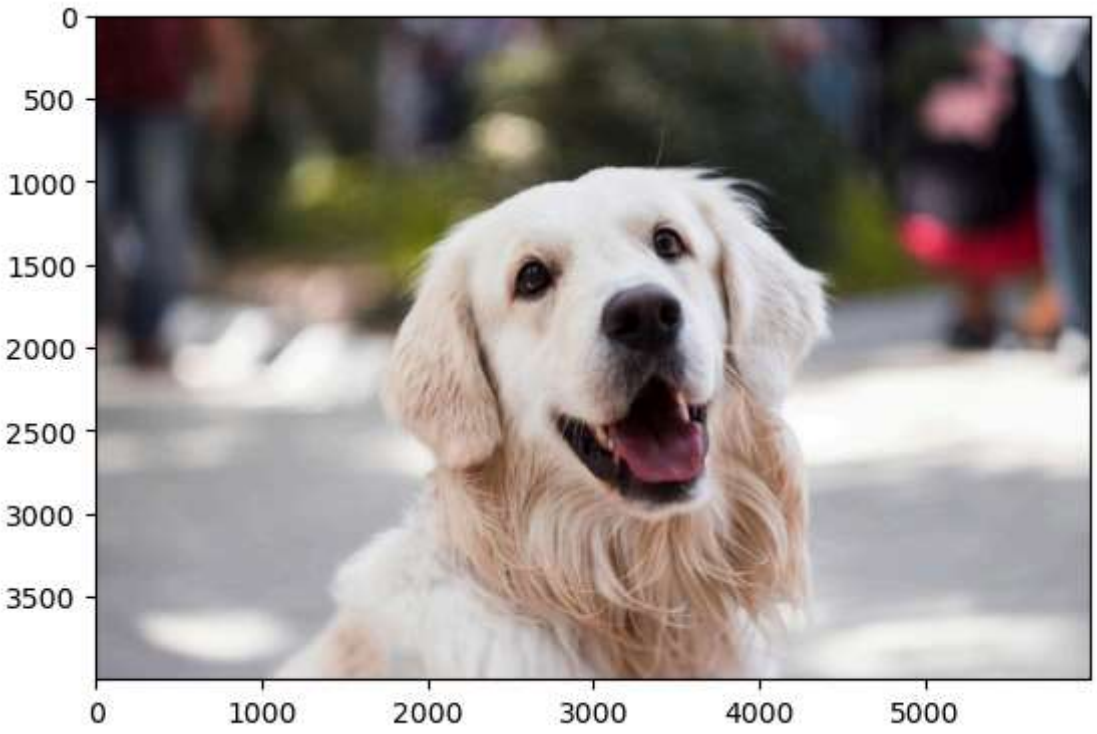
Out[31]:
```
array([[[ 44,  12,  17],
        [ 44,  12,  17],
        [ 44,  12,  17],
        ...,
        [169, 178, 193],
        [169, 178, 193],
        [168, 177, 192]],

       [[ 44,  12,  17],
        [ 44,  12,  17],
        [ 44,  12,  17],
        ...,
        [169, 178, 193],
        [168, 177, 192],
        [168, 177, 192]],

       [[ 44,  12,  17],
        [ 44,  12,  17],
        [ 44,  12,  17],
        ...,
        [168, 177, 192],
        [168, 177, 192],
        [168, 177, 192]],

       ...,

       [[139, 137, 148],
        [139, 137, 148],
        [139, 137, 148],
        ...,
        [187, 188, 190],
        [187, 188, 190],
        [187, 188, 190]],

       [[139, 137, 148],
        [139, 137, 148],
        [139, 137, 148],
        ...,
        [187, 188, 190],
        [187, 188, 190],
        [187, 188, 190]],

       [[139, 137, 148],
        [139, 137, 148],
        [139, 137, 148],
        ...,
        [187, 188, 190],
        [187, 188, 190],
        [187, 188, 190]]], dtype=uint8)
```

In [33]:
```
dog_arr==dog_red
```

Out[33]:
```
array([[[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       ...,

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]]])
```

In [35]:
```
plt.imshow(dog_red)
```

Out[35]:
```
<matplotlib.image.AxesImage at 0x23c73333080>
```

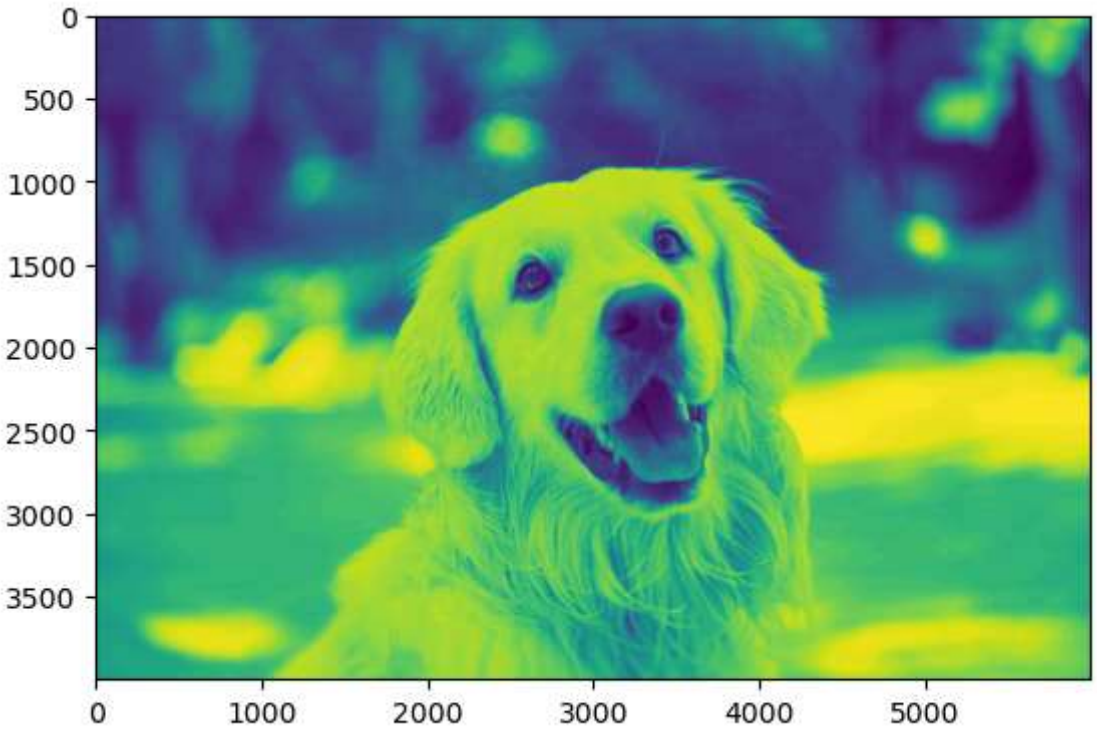


In [39]:
```
dog_red.shape
```

Out[39]:
```
(4000, 6000, 3)
```

In [43]:
```
# R G B
plt.imshow(dog_red[:,:,0])
```

Out[43]:
```
<matplotlib.image.AxesImage at 0x23c1615fc80>
```

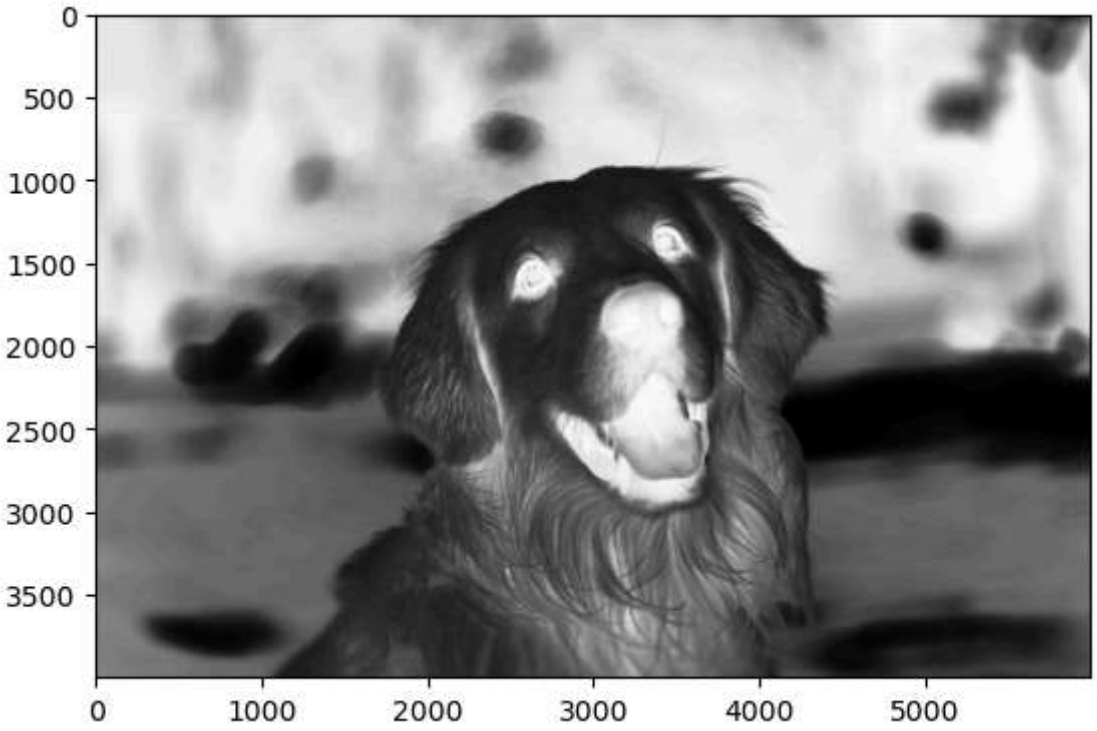


In [45]:
```
dog_red[:,:,0]
```

Out[45]:
```
array([[ 44,  44,  44, ..., 169, 169, 168],
       [ 44,  44,  44, ..., 169, 168, 168],
       [ 44,  44,  44, ..., 168, 168, 168],
       ...,
       [139, 139, 139, ..., 187, 187, 187],
       [139, 139, 139, ..., 187, 187, 187],
       [139, 139, 139, ..., 187, 187, 187]], dtype=uint8)
```

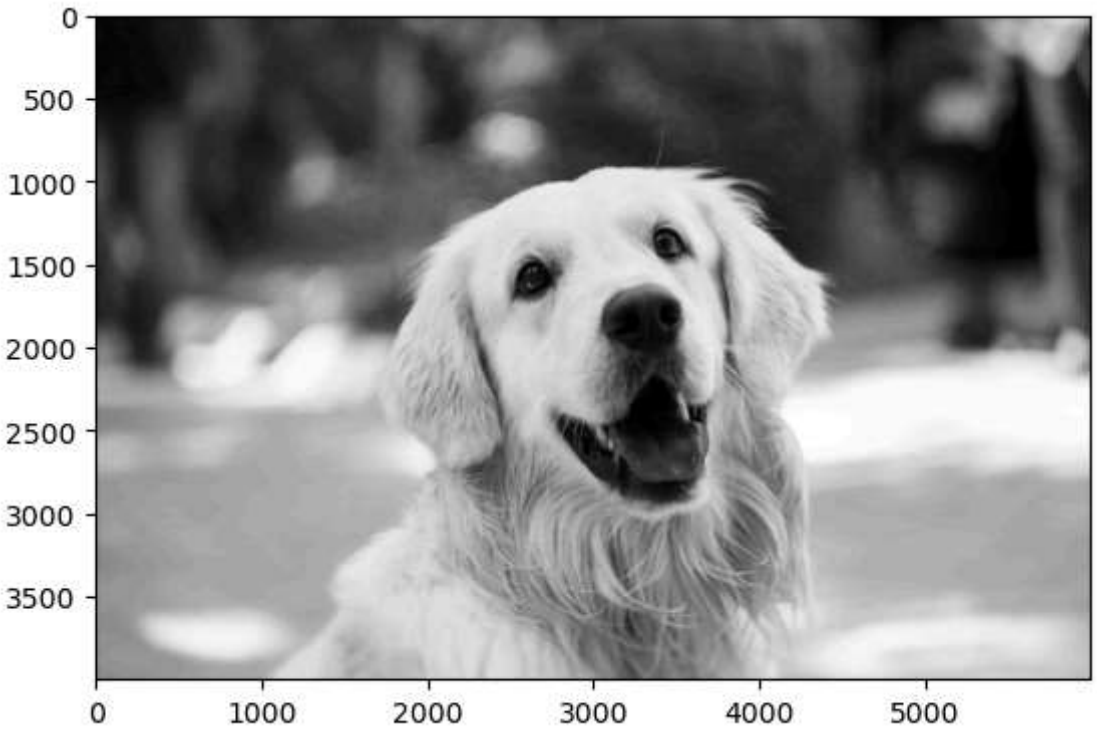
In [47]:
```
plt.imshow(dog_red[:,:,0], cmap='Greys')
```

Out[47]:
```
<matplotlib.image.AxesImage at 0x23c16163380>
```



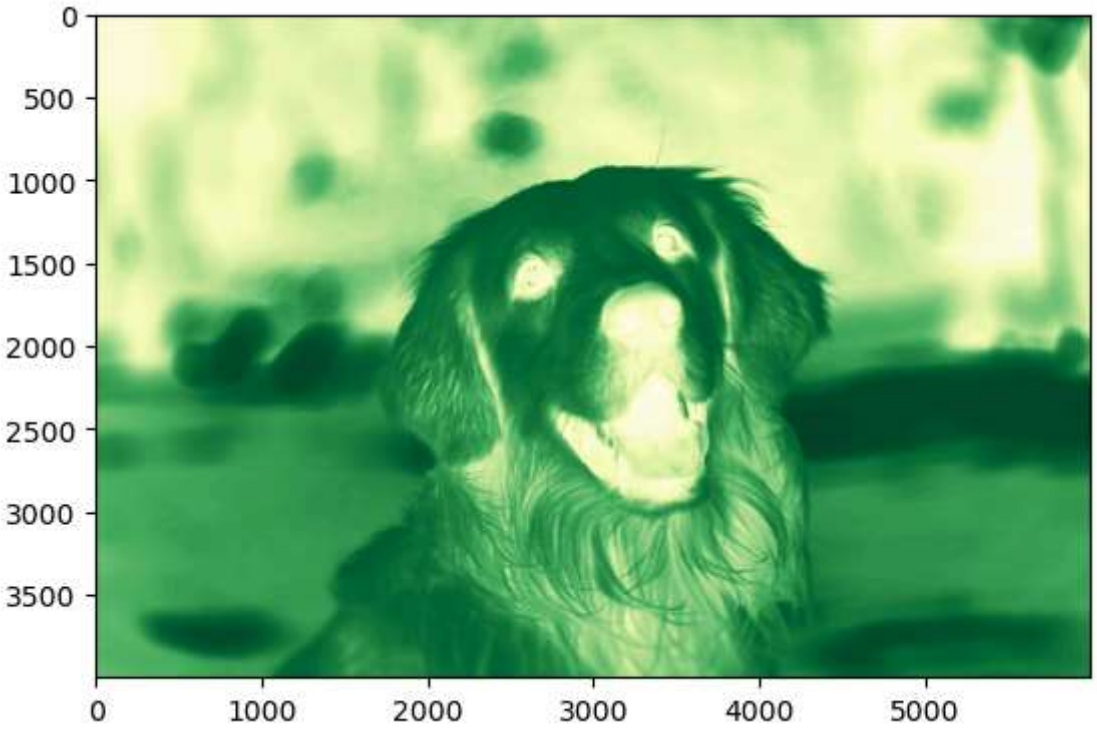
In [49]:
```
plt.imshow(dog_red[:,:,1],cmap='grey')
```

Out[49]:
```
<matplotlib.image.AxesImage at 0x23c16177560>
```



In [51]:
```
plt.imshow(dog_red[:,:,1],cmap='YlGn')
```

Out[51]: <matplotlib.image.AxesImage at 0x23c19cb6570>



In [53]:
```
dog_red[:,:,0]
```

Out[53]:
```
array([[ 44,  44,  44, ..., 169, 169, 168],
       [ 44,  44,  44, ..., 169, 168, 168],
       [ 44,  44,  44, ..., 168, 168, 168],
       ...,
       [139, 139, 139, ..., 187, 187, 187],
       [139, 139, 139, ..., 187, 187, 187],
       [139, 139, 139, ..., 187, 187, 187]], dtype=uint8)
```

In [55]:
```
dog_red[:,:,1]
```

Out[55]:
```
array([[ 12,  12,  12, ..., 178, 178, 177],
       [ 12,  12,  12, ..., 178, 177, 177],
       [ 12,  12,  12, ..., 177, 177, 177],
       ...,
       [137, 137, 137, ..., 188, 188, 188],
       [137, 137, 137, ..., 188, 188, 188],
       [137, 137, 137, ..., 188, 188, 188]], dtype=uint8)
```

In [57]:
```
dog_red[:,:,2]
```

Out[57]:
```
array([[ 17,  17,  17, ..., 193, 193, 192],
       [ 17,  17,  17, ..., 193, 192, 192],
       [ 17,  17,  17, ..., 192, 192, 192],
       ...,
       [148, 148, 148, ..., 190, 190, 190],
       [148, 148, 148, ..., 190, 190, 190],
       [148, 148, 148, ..., 190, 190, 190]], dtype=uint8)
```

In [63]:
```
plt.imshow(dog_red)
```

Out[63]:
```
<matplotlib.image.AxesImage at 0x23c19c61a00>
```

In [65]:
```
dog_arr
```

Out[65]:
```
array([[[ 44,  12,  17],
        [ 44,  12,  17],
        [ 44,  12,  17],
        ...,
        [169, 178, 193],
        [169, 178, 193],
        [168, 177, 192]],

       [[ 44,  12,  17],
        [ 44,  12,  17],
        [ 44,  12,  17],
        ...,
        [169, 178, 193],
        [168, 177, 192],
        [168, 177, 192]],

       [[ 44,  12,  17],
        [ 44,  12,  17],
        [ 44,  12,  17],
        ...,
        [168, 177, 192],
        [168, 177, 192],
        [168, 177, 192]],

       ...,

       [[139, 137, 148],
        [139, 137, 148],
        [139, 137, 148],
        ...,
        [187, 188, 190],
        [187, 188, 190],
        [187, 188, 190]],

       [[139, 137, 148],
        [139, 137, 148],
        [139, 137, 148],
        ...,
        [187, 188, 190],
        [187, 188, 190],
        [187, 188, 190]],

       [[139, 137, 148],
        [139, 137, 148],
        [139, 137, 148],
        ...,
        [187, 188, 190],
        [187, 188, 190],
        [187, 188, 190]]], dtype=uint8)
```

In [67]:
```
dog_red
```

Out[67]:
```
array([[[ 44,   0,  17],
        [ 44,   0,  17],
        [ 44,   0,  17],
        ...,
        [169,   0, 193],
        [169,   0, 193],
        [168,   0, 192]],

       [[ 44,   0,  17],
        [ 44,   0,  17],
        [ 44,   0,  17],
        ...,
        [169,   0, 193],
        [168,   0, 192],
        [168,   0, 192]],

       [[ 44,   0,  17],
        [ 44,   0,  17],
        [ 44,   0,  17],
        ...,
        [168,   0, 192],
        [168,   0, 192],
        [168,   0, 192]],

       ...,

       [[139,   0, 148],
        [139,   0, 148],
        [139,   0, 148],
        ...,
        [187,   0, 190],
        [187,   0, 190],
        [187,   0, 190]],

       [[139,   0, 148],
        [139,   0, 148],
        [139,   0, 148],
        ...,
        [187,   0, 190],
        [187,   0, 190],
        [187,   0, 190]],

       [[139,   0, 148],
        [139,   0, 148],
        [139,   0, 148],
        ...,
        [187,   0, 190],
        [187,   0, 190],
        [187,   0, 190]]], dtype=uint8)
```

In [72]:
```
dog
```

Out[72]:

In [82]:
```
arr1 = np.asarray(dog)
print(type(arr1))
```

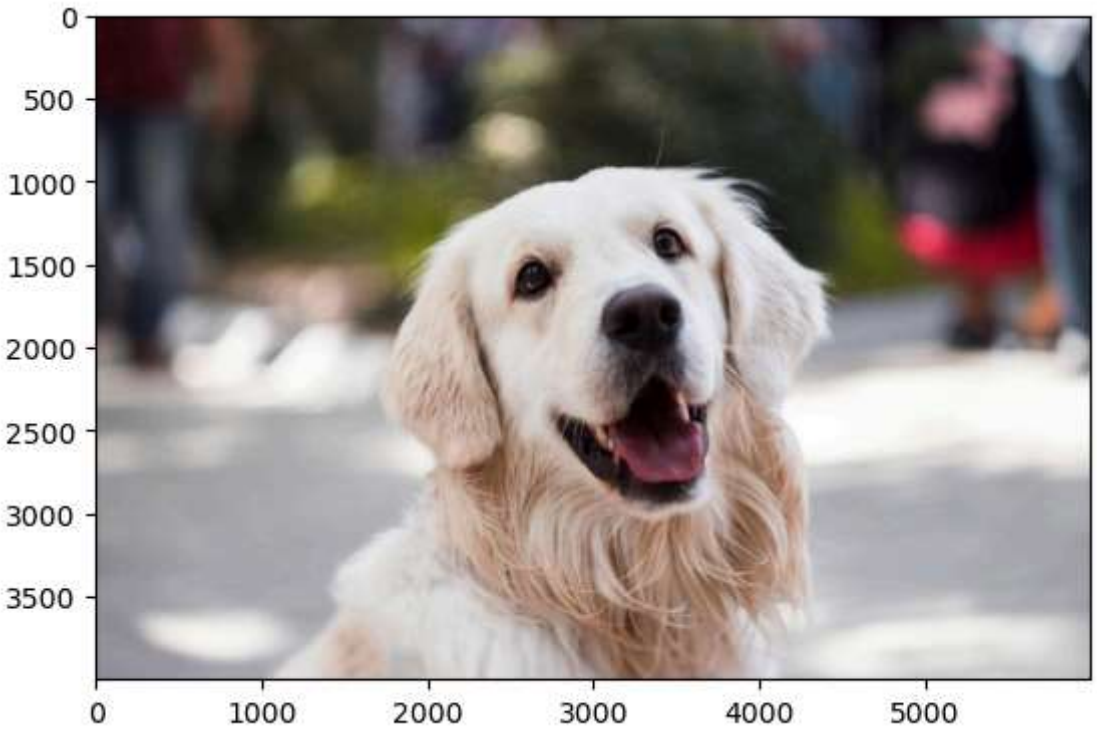
```
<class 'numpy.ndarray'>
```

In [84]:
```
arr1.shape
```

Out[84]:
```
(4000, 6000, 3)
```

In [86]:
```
plt.imshow(arr1)
```

Out[86]:
```
<matplotlib.image.AxesImage at 0x23c19b4b6e0>
```

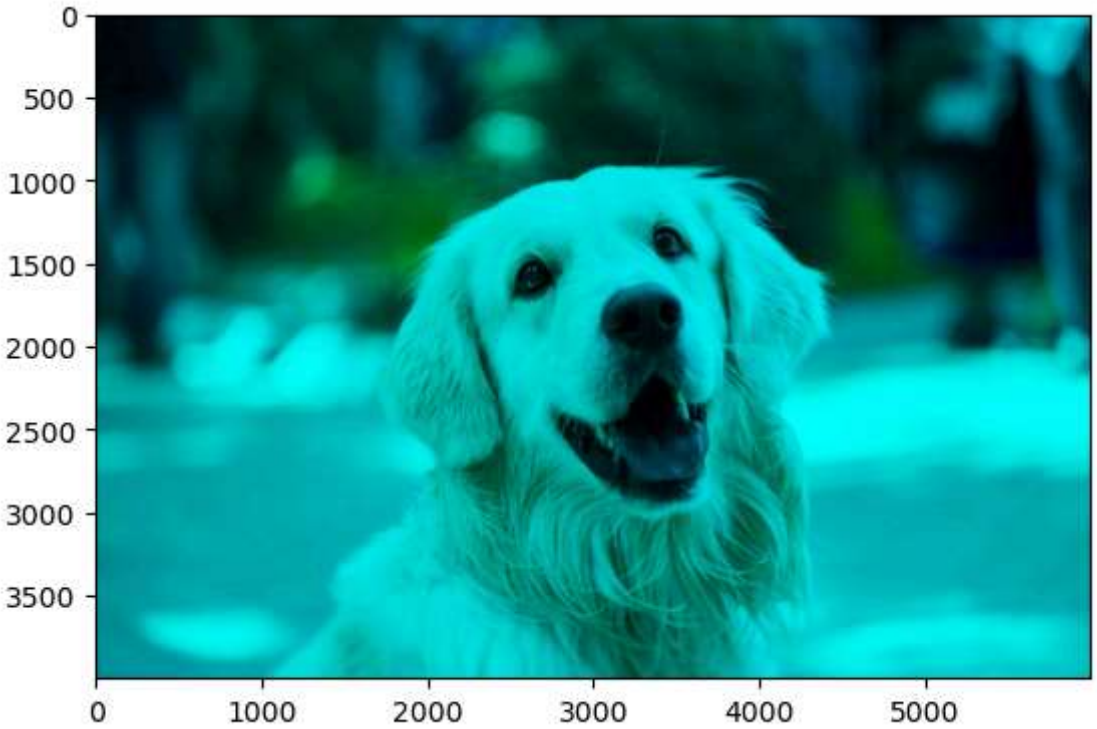


In [90]:
```
dog1=arr1.copy()
```

In [92]:
```
dog1[:,:,0]=0
```

In [94]:
```
plt.imshow(dog1)
```

Out[94]: <matplotlib.image.AxesImage at 0x23c19b6b0e0>



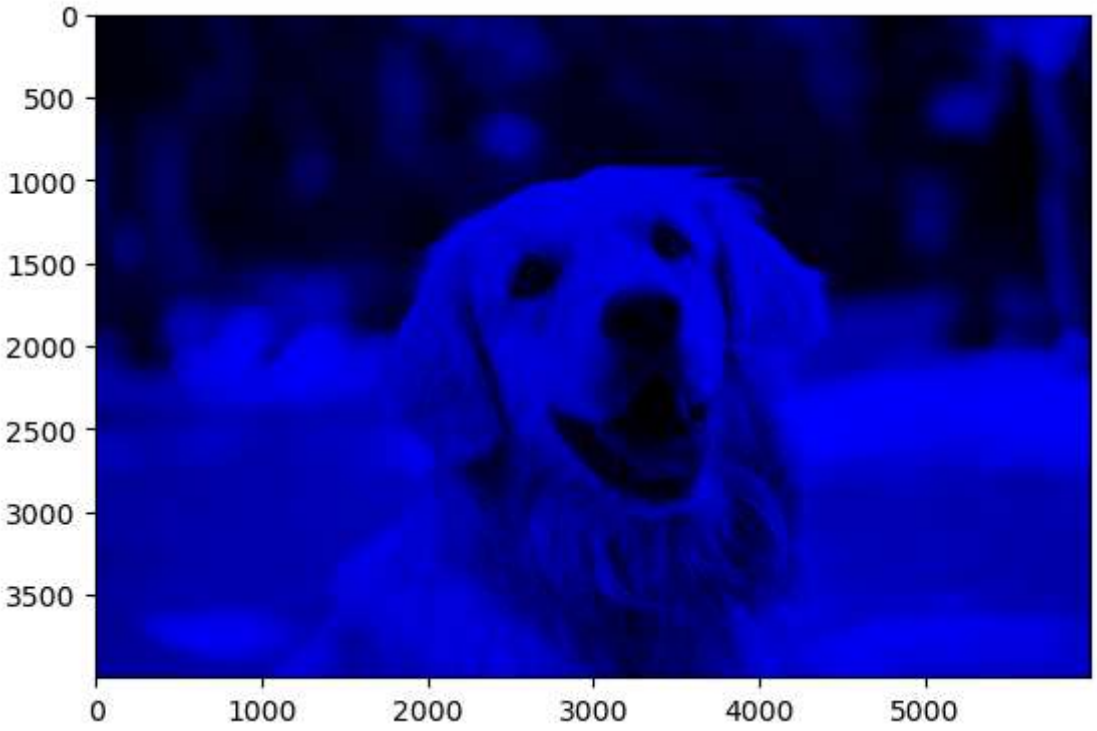
In [96]:
```
dog1[:,:,1]
```

Out[96]:
```
array([[ 12,  12,  12, ..., 178, 178, 177],
       [ 12,  12,  12, ..., 178, 177, 177],
       [ 12,  12,  12, ..., 177, 177, 177],
       ...,
       [137, 137, 137, ..., 188, 188, 188],
       [137, 137, 137, ..., 188, 188, 188],
       [137, 137, 137, ..., 188, 188, 188]], dtype=uint8)
```

In [98]:
```
dog1[:,:,1]=0
```

In [100…
```
plt.imshow(dog1)
```

Out[100…
```
<matplotlib.image.AxesImage at 0x23c19be0740>
```



In [ ]: