

Image to array conversion project using pil, np, plt

pilp- Python Imagine Library

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

```
In [2]: ones_arr = np.ones((3,3))
ones_arr
```

```
Out[2]: array([[1., 1., 1.],
               [1., 1., 1.],
               [1., 1., 1.]])
```

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

```
Out[3]: 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 [4]: ones_arr*255
```

```
Out[4]: 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 [5]: import matplotlib.pyplot as plt
```

```
In [6]: from PIL import Image
```

```
In [7]: Kakashi_img = Image.open("Kakashi.png")
Kakashi_img
```

Out[7]:



```
In [8]: type(Kakashi_img)
```

Out[8]: PIL.PngImagePlugin.PngImageFile

```
In [9]: Kakashi_arr = np.asarray(Kakashi_img)
Kakashi_arr
```

```
Out[9]: array([[[159, 175, 208],
   [159, 176, 209],
   [159, 179, 211],
   ...,
   [247, 232, 251],
   [248, 233, 252],
   [249, 234, 252]],

  [[159, 176, 209],
   [159, 177, 210],
   [159, 180, 212],
   ...,
   [247, 232, 251],
   [248, 234, 253],
   [249, 235, 253]],

  [[158, 177, 210],
   [158, 177, 211],
   [159, 180, 213],
   ...,
   [245, 234, 252],
   [247, 234, 253],
   [248, 235, 254]],

  ...,

  [[ 70,  73,  65],
   [ 70,  73,  65],
   [ 71,  73,  66],
   ...,
   [179, 148,  81],
   [179, 151,  79],
   [178, 153,  77]],

  [[ 71,  74,  65],
   [ 71,  74,  65],
   [ 72,  74,  66],
   ...,
   [178, 147,  80],
   [178, 150,  78],
   [177, 152,  77]],

  [[ 73,  75,  65],
   [ 73,  75,  65],
   [ 73,  74,  66],
   ...,
   [177, 146,  79],
   [177, 149,  77],
   [177, 151,  75]]], dtype=uint8)
```

```
In [10]: type(Kakashi_arr)
```

```
Out[10]: numpy.ndarray
```

```
In [11]: Kakashi_arr.shape
```

```
Out[11]: (1400, 1920, 3)
```

```
In [12]: plt.imshow(Kakashi_arr)
```

```
Out[12]: <matplotlib.image.AxesImage at 0x29e95d47590>
```



```
In [13]: plt.imshow(Kakashi_img)
```

```
Out[13]: <matplotlib.image.AxesImage at 0x29e96621f50>
```



```
In [14]: Kakashi_red = Kakashi_arr.copy()
Kakashi_red
```

```
Out[14]: array([[[159, 175, 208],
   [159, 176, 209],
   [159, 179, 211],
   ...,
   [247, 232, 251],
   [248, 233, 252],
   [249, 234, 252]],

   [[[159, 176, 209],
   [159, 177, 210],
   [159, 180, 212],
   ...,
   [247, 232, 251],
   [248, 234, 253],
   [249, 235, 253]],

   [[158, 177, 210],
   [158, 177, 211],
   [159, 180, 213],
   ...,
   [245, 234, 252],
   [247, 234, 253],
   [248, 235, 254]],

   ...,

   [[ 70,  73,  65],
   [ 70,  73,  65],
   [ 71,  73,  66],
   ...,
   [179, 148,  81],
   [179, 151,  79],
   [178, 153,  77]],

   [[ 71,  74,  65],
   [ 71,  74,  65],
   [ 72,  74,  66],
   ...,
   [178, 147,  80],
   [178, 150,  78],
   [177, 152,  77]],

   [[ 73,  75,  65],
   [ 73,  75,  65],
   [ 73,  74,  66],
   ...,
   [177, 146,  79],
   [177, 149,  77],
   [177, 151,  75]]], dtype=uint8)
```

```
In [15]: Kakashi_red == Kakashi_arr
```

```
Out[15]: 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 [16]: Kakashi_red.shape
```

```
Out[16]: (1400, 1920, 3)
```

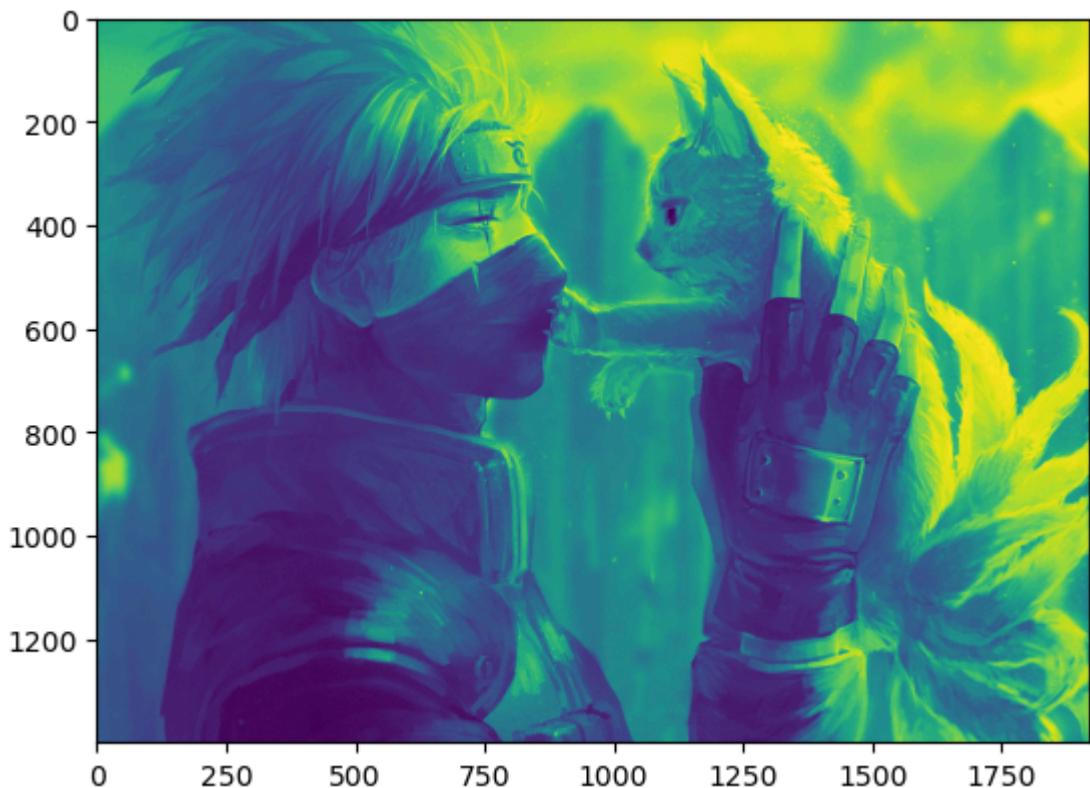
```
In [17]: plt.imshow(Kakashi_red)
```

```
Out[17]: <matplotlib.image.AxesImage at 0x29e965ab490>
```



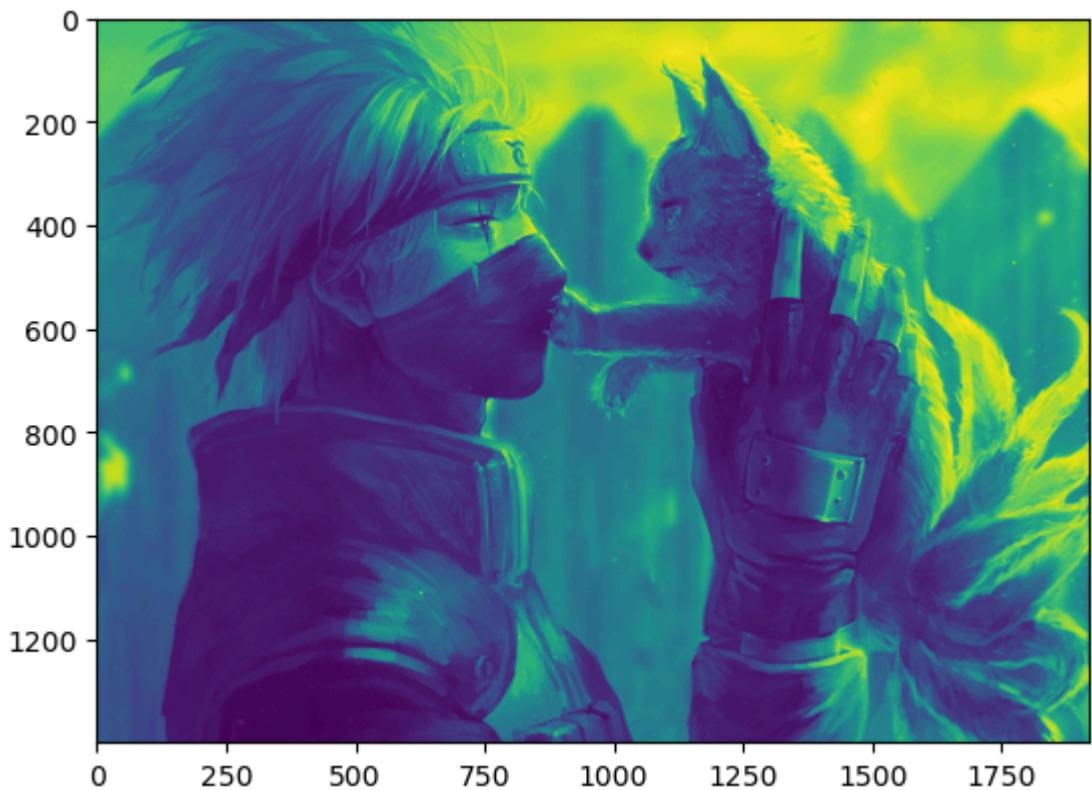
```
In [18]: plt.imshow(Kakashi_red[:, :, 0])
```

```
Out[18]: <matplotlib.image.AxesImage at 0x29e966b2e10>
```



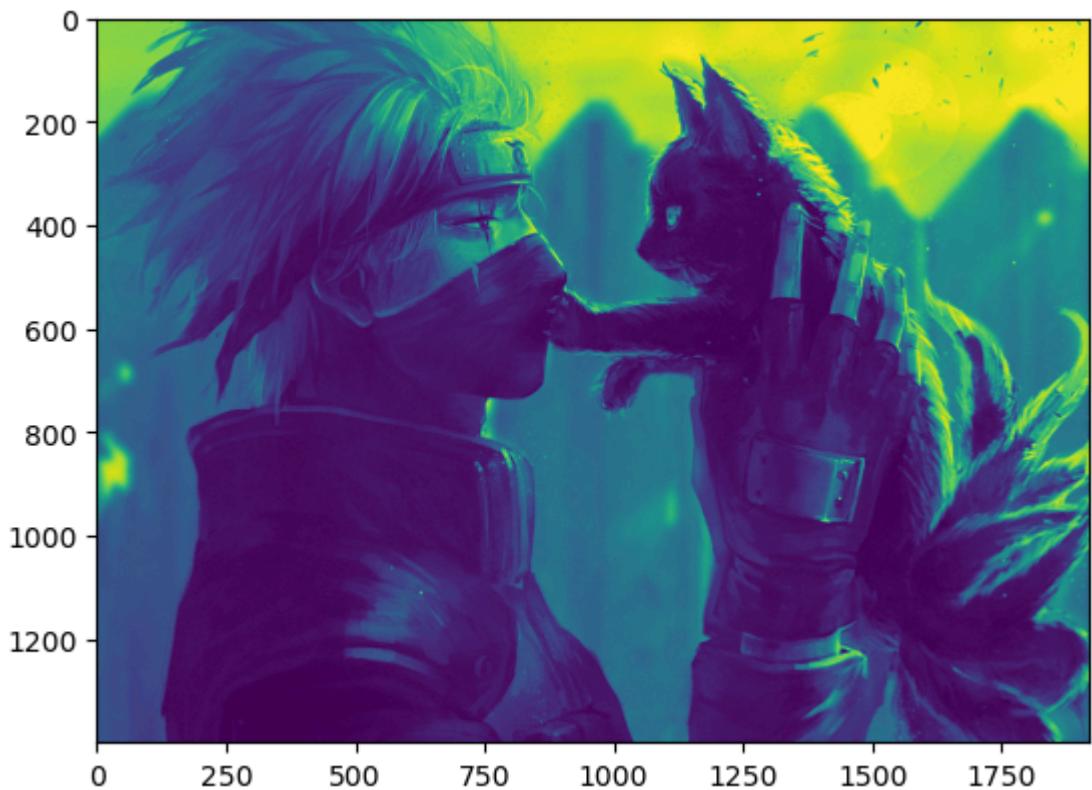
```
In [19]: plt.imshow(Kakashi_red[:, :, 1])
```

```
Out[19]: <matplotlib.image.AxesImage at 0x29e9675f590>
```



```
In [20]: plt.imshow(Kakashi_red[:, :, 2])
```

```
Out[20]: <matplotlib.image.AxesImage at 0x29e9b2a4ad0>
```

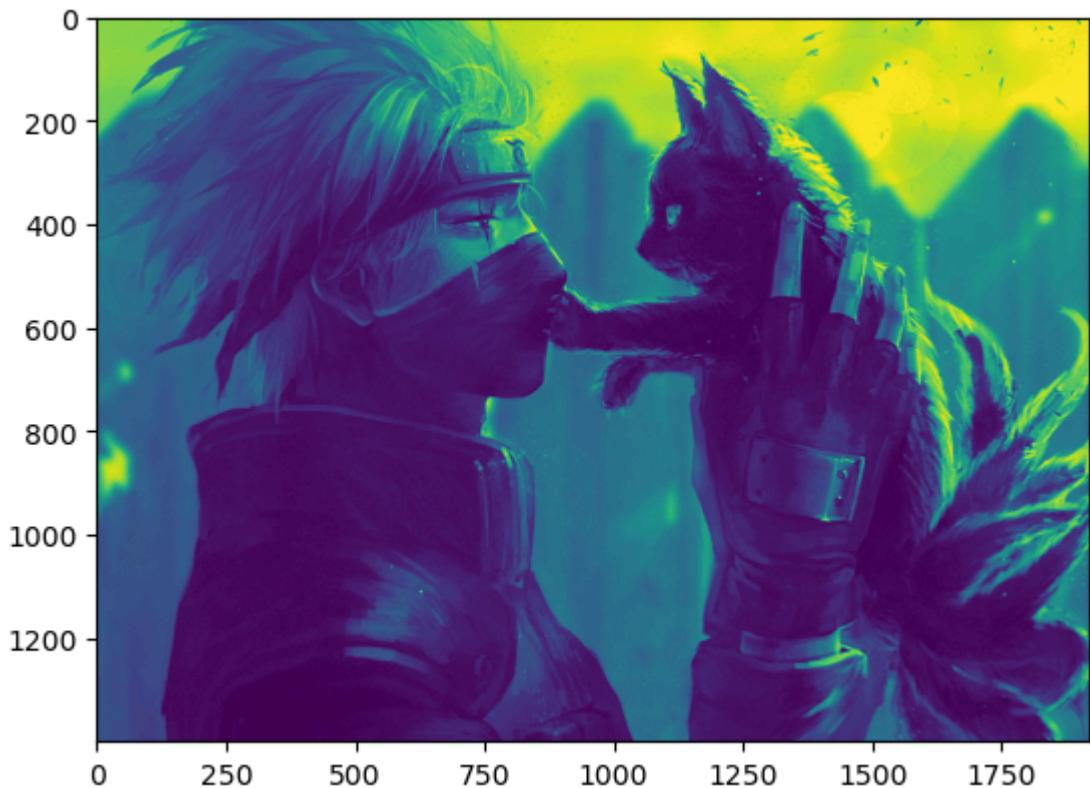


```
In [21]: plt.imshow(Kakashi_red[:, :, 3])
```

```
--  
--  
IndexError                                     Traceback (most recent call last  
t)  
Cell In[21], line 1  
----> 1 plt.imshow(Kakashi_red[:, :, 3])  
  
IndexError: index 3 is out of bounds for axis 2 with size 3
```

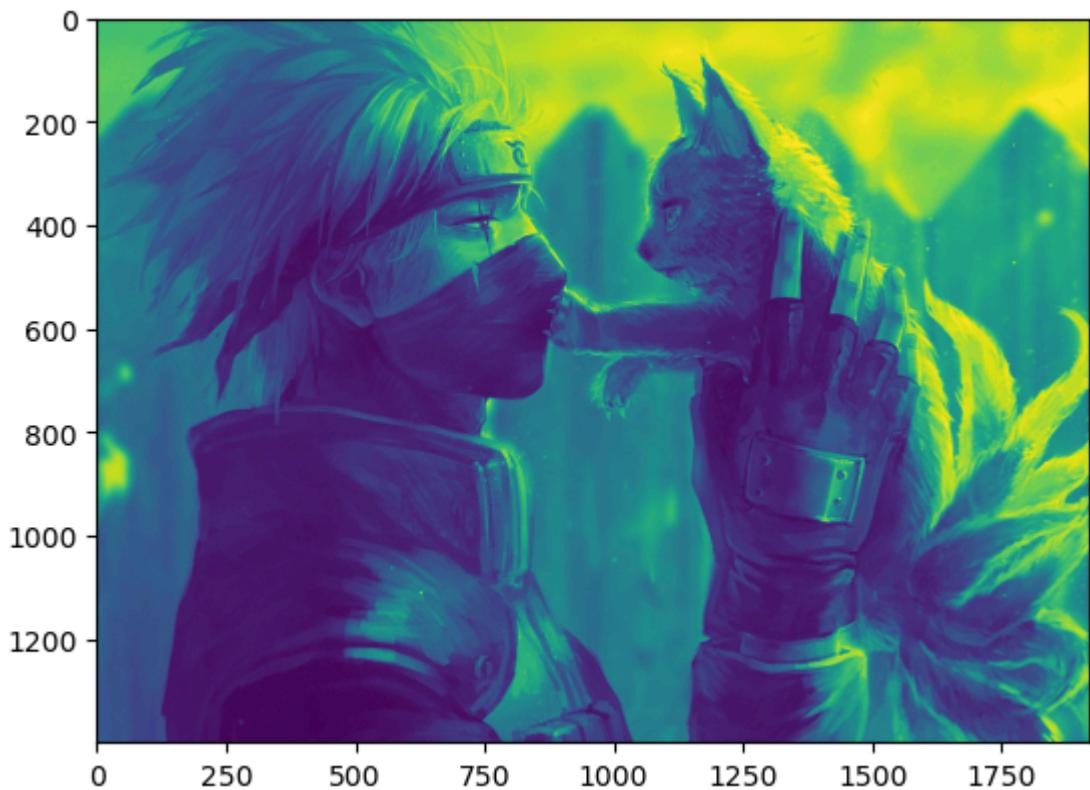
```
In [23]: plt.imshow(Kakashi_red[:, :, -1])
```

```
Out[23]: <matplotlib.image.AxesImage at 0x29e9c835590>
```



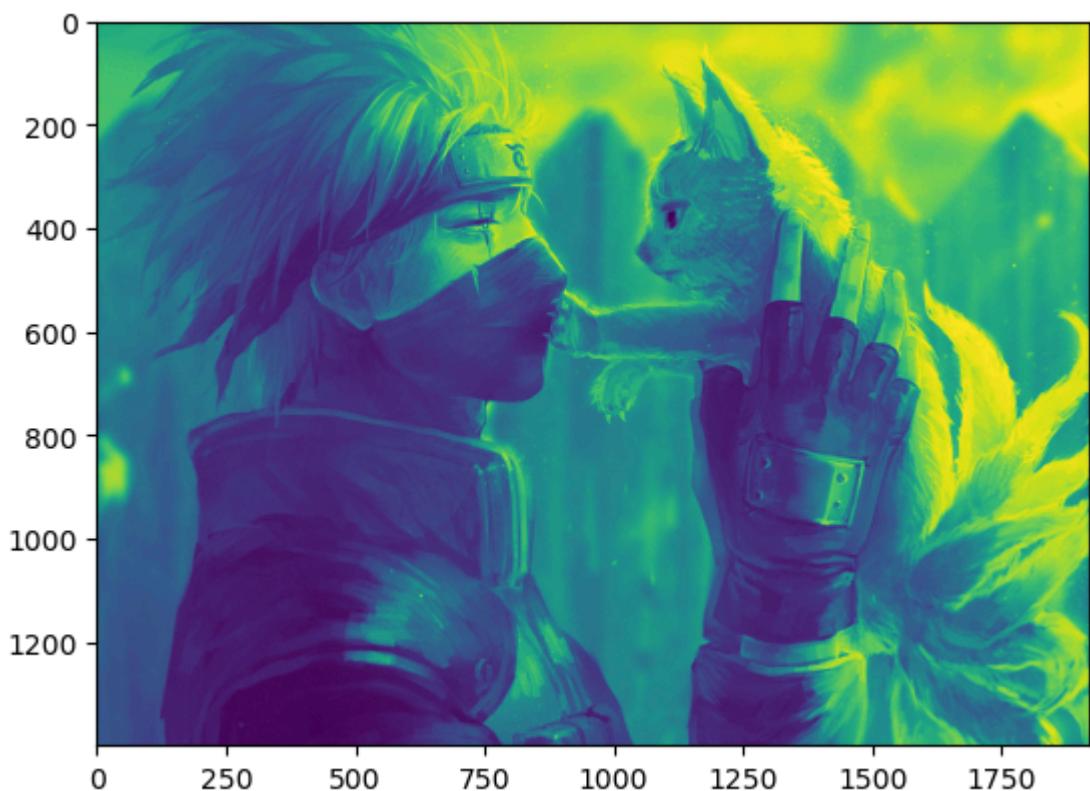
```
In [24]: plt.imshow(Kakashi_red[:, :, -2])
```

```
Out[24]: <matplotlib.image.AxesImage at 0x29e9c8ab390>
```



```
In [22]: plt.imshow(Kakashi_red[:, :, -3])
```

```
Out[22]: <matplotlib.image.AxesImage at 0x29e9bd5bd50>
```

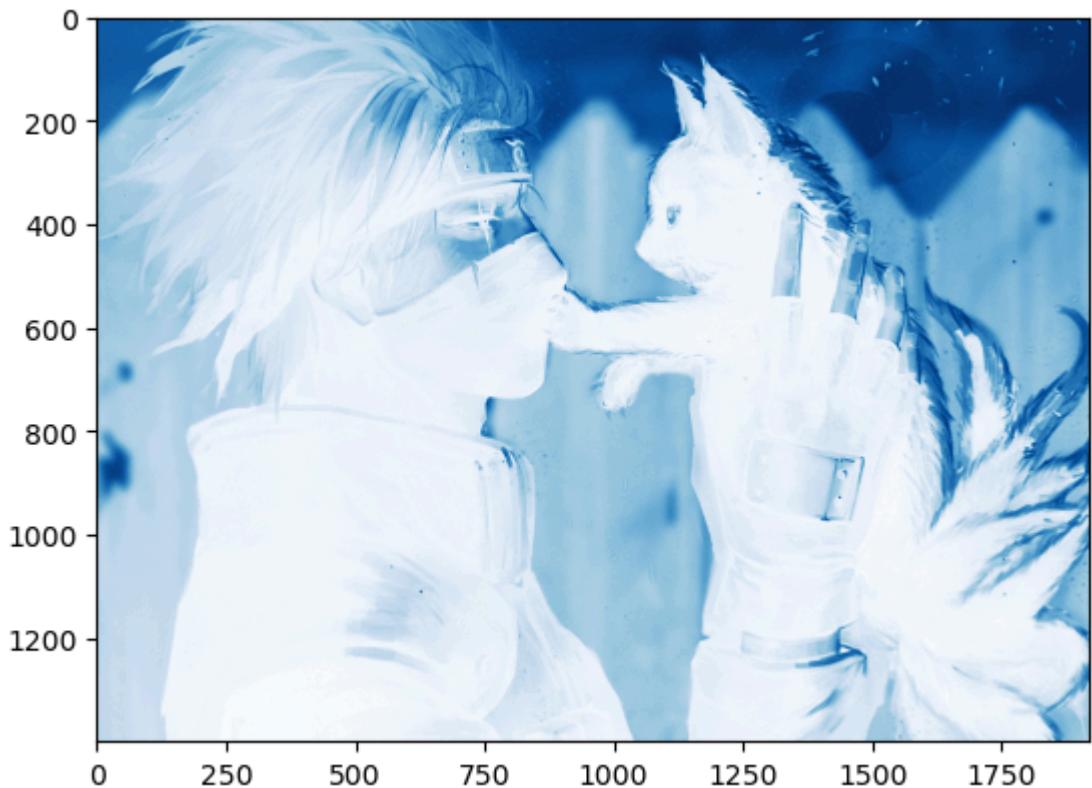


```
In [25]: plt.imshow(Kakashi_red[:, :, -4])
```

```
--  
--  
IndexError                                     Traceback (most recent call las  
t)  
Cell In[25], line 1  
----> 1 plt.imshow(Kakashi_red[:, :, -4])  
  
IndexError: index -4 is out of bounds for axis 2 with size 3
```

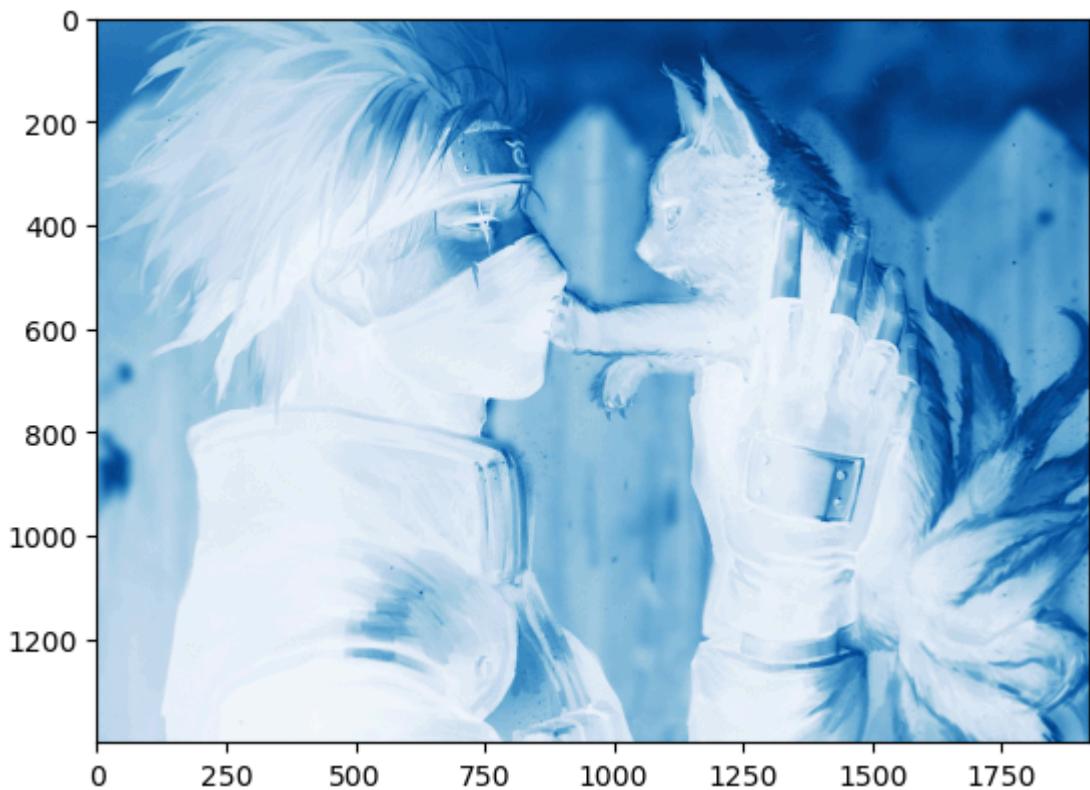
```
In [26]: plt.imshow(Kakashi_red[:, :, 2], cmap = 'Blues')
```

```
Out[26]: <matplotlib.image.AxesImage at 0x29e9c8e8d90>
```



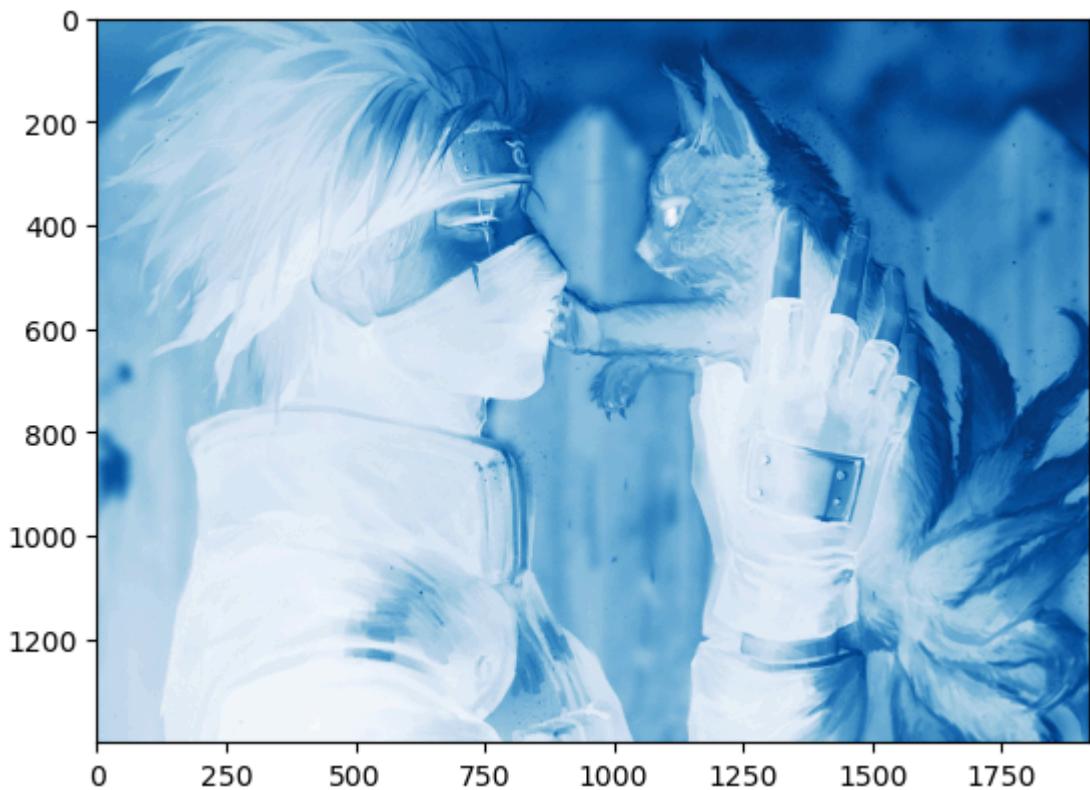
```
In [27]: plt.imshow(Kakashi_red[:, :, 1], cmap = 'Blues')
```

```
Out[27]: <matplotlib.image.AxesImage at 0x29e9c8f9090>
```



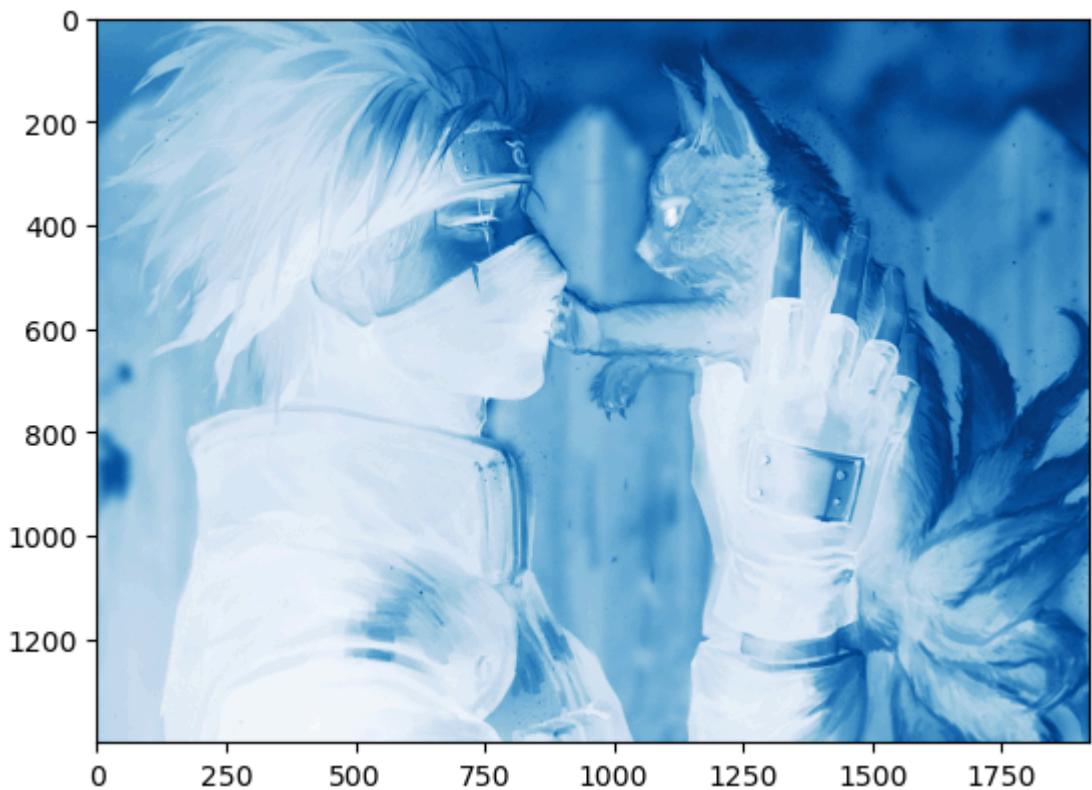
```
In [28]: plt.imshow(Kakashi_red[:, :, 0], cmap = 'Blues')
```

```
Out[28]: <matplotlib.image.AxesImage at 0x29e9cf2fe10>
```



```
In [29]: plt.imshow(Kakashi_red[:, :, -3], cmap = 'Blues')
```

```
Out[29]: <matplotlib.image.AxesImage at 0x29e9d220d90>
```



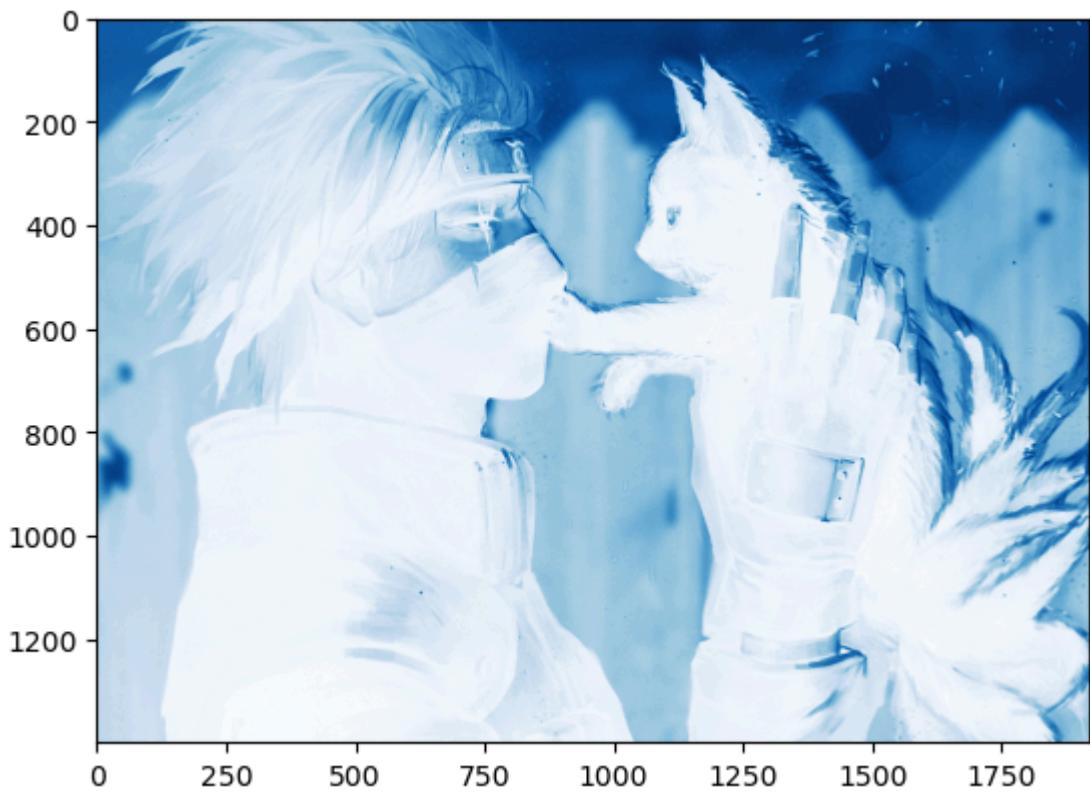
```
In [30]: plt.imshow(Kakashi_red[:, :, -2], cmap = 'Blues')
```

```
Out[30]: <matplotlib.image.AxesImage at 0x29e9d2e3150>
```



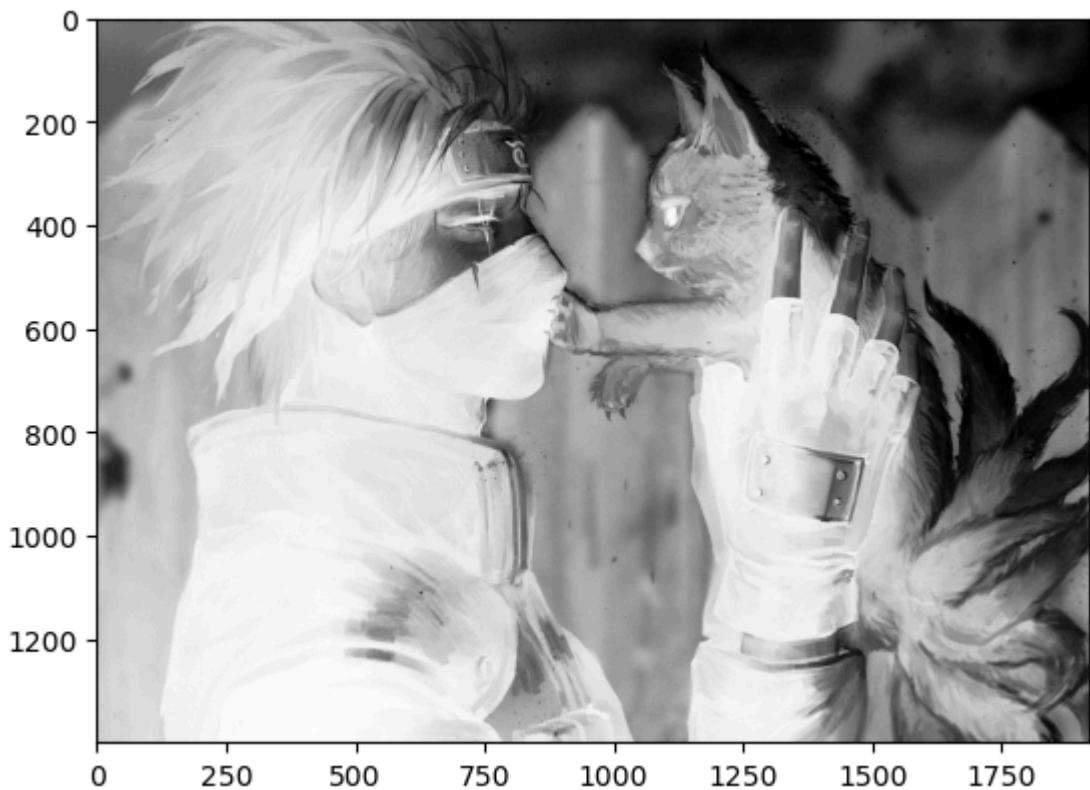
```
In [31]: plt.imshow(Kakashi_red[:, :, -1], cmap = 'Blues')
```

```
Out[31]: <matplotlib.image.AxesImage at 0x29e9c4dae10>
```



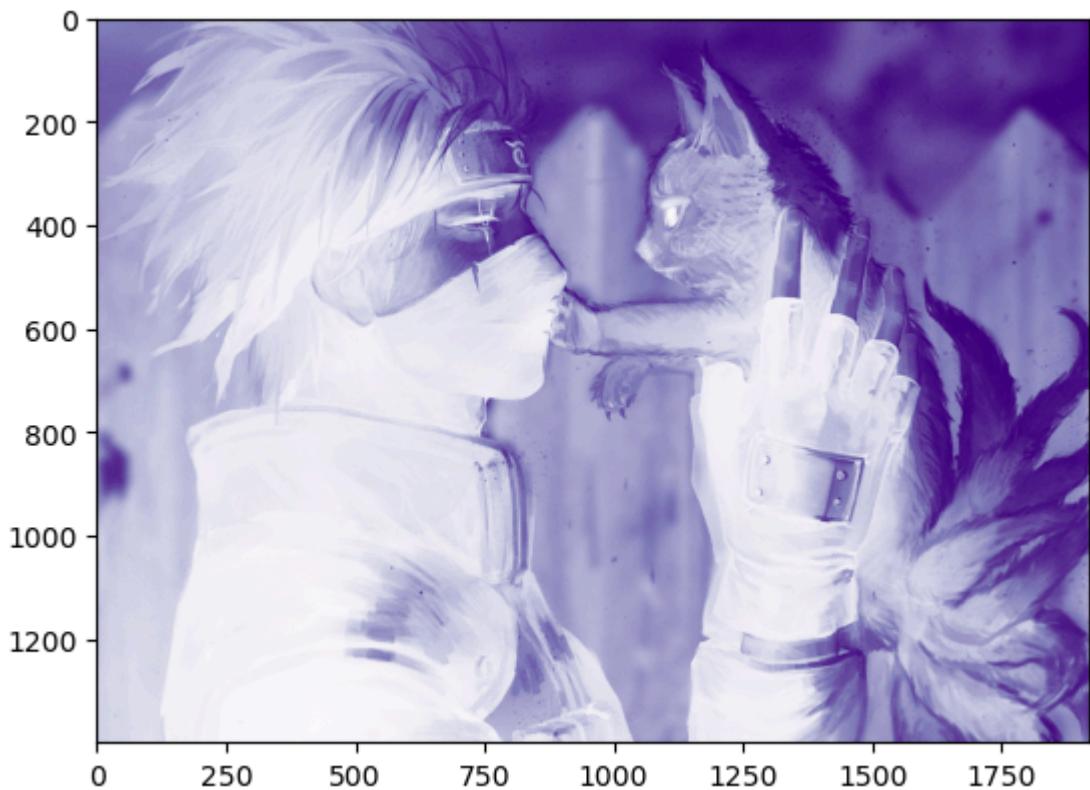
```
In [32]: plt.imshow(Kakashi_red[:, :, 0], cmap = 'Greys')
```

```
Out[32]: <matplotlib.image.AxesImage at 0x29e9eef1cd0>
```



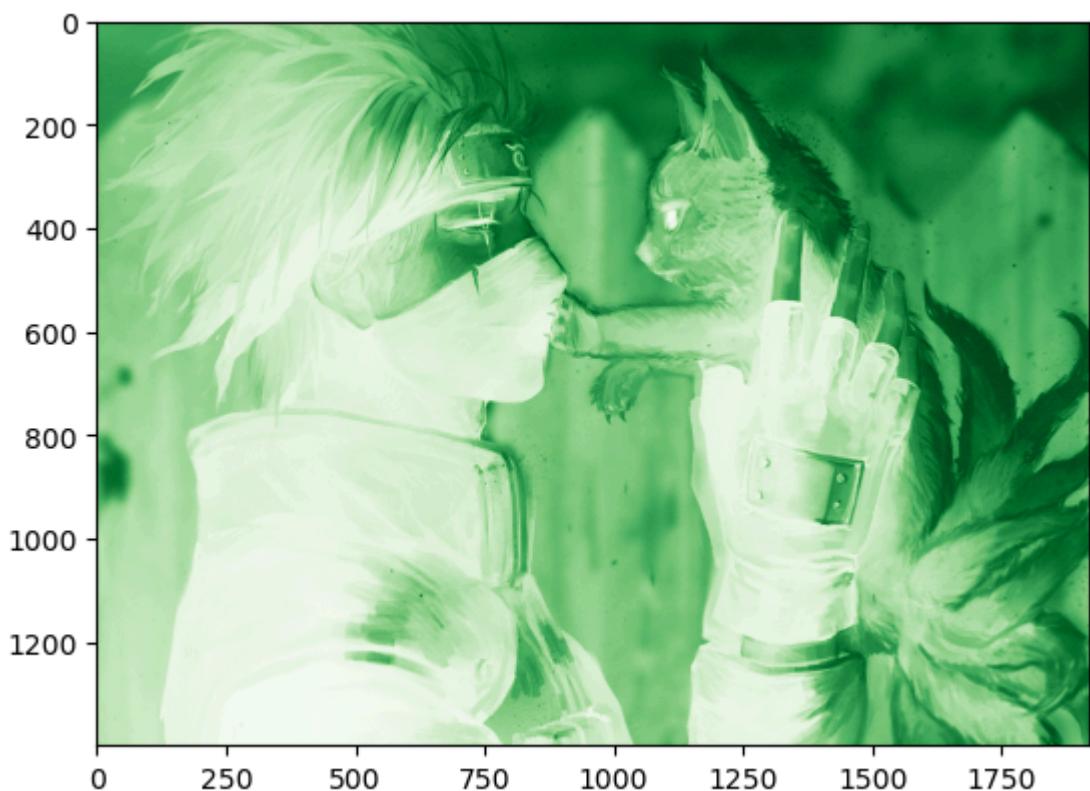
```
In [33]: plt.imshow(Kakashi_red[:, :, 0], cmap = 'Purples')
```

```
Out[33]: <matplotlib.image.AxesImage at 0x29e9ef04950>
```



```
In [34]: plt.imshow(Kakashi_red[:, :, 0], cmap = 'Greens')
```

```
Out[34]: <matplotlib.image.AxesImage at 0x29e9ee18890>
```



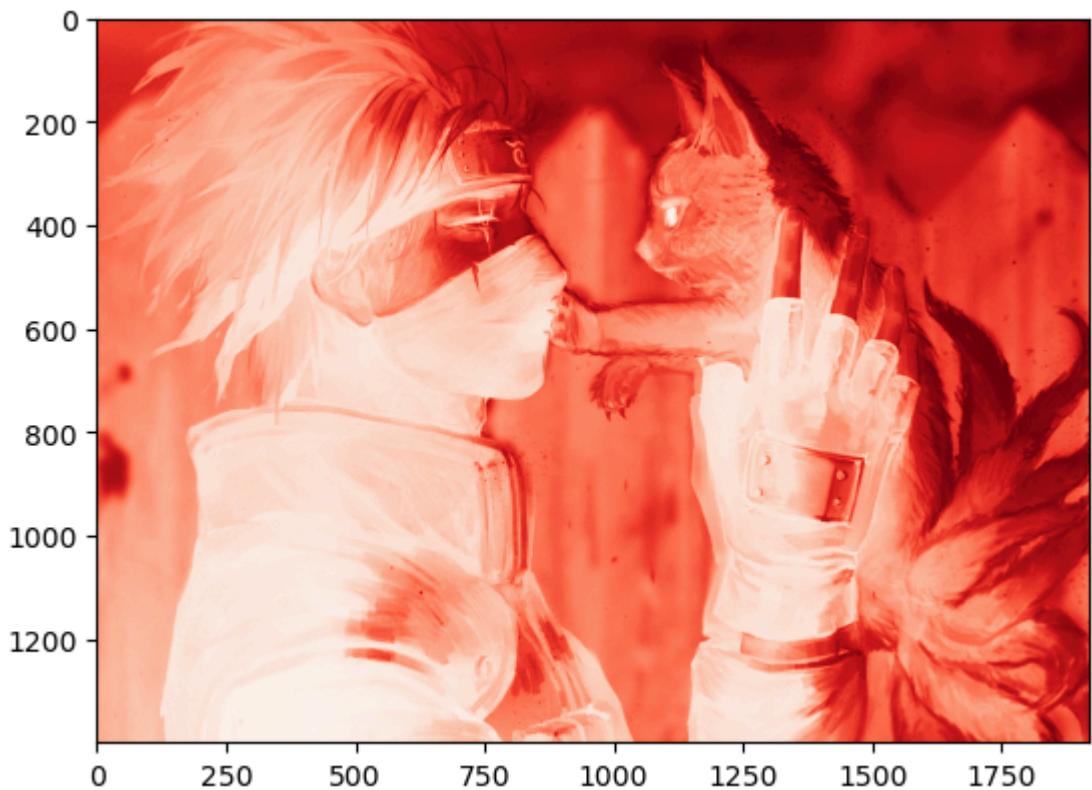
```
In [35]: plt.imshow(Kakashi_red[:, :, 0], cmap = 'Oranges')
```

```
Out[35]: <matplotlib.image.AxesImage at 0x29e9ee615d0>
```



```
In [36]: plt.imshow(Kakashi_red[:, :, 0], cmap = 'Reds')
```

```
Out[36]: <matplotlib.image.AxesImage at 0x29e9fab06d0>
```



```
In [37]: plt.imshow(Kakashi_red[:, :, 0], cmap = 'YlOrBr')
```

```
Out[37]: <matplotlib.image.AxesImage at 0x29e9fac75d0>
```



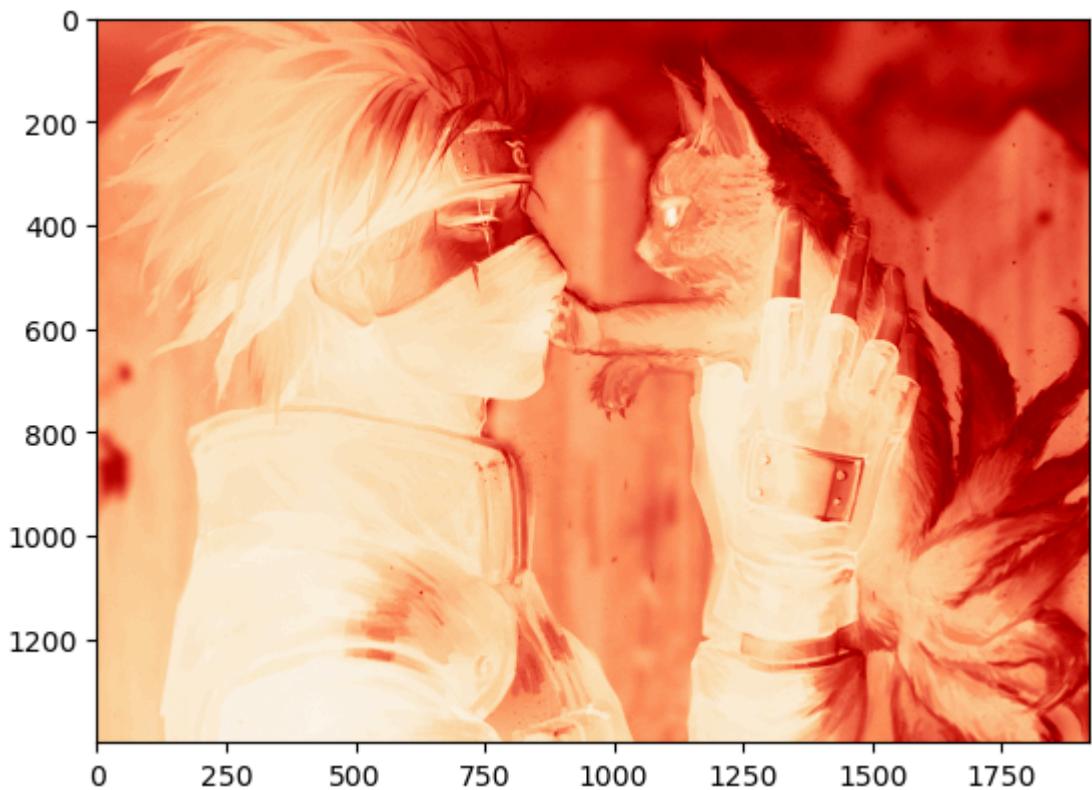
```
In [38]: plt.imshow(Kakashi_red[:, :, 0], cmap = 'YlOrRd')
```

```
Out[38]: <matplotlib.image.AxesImage at 0x29ea00d9810>
```



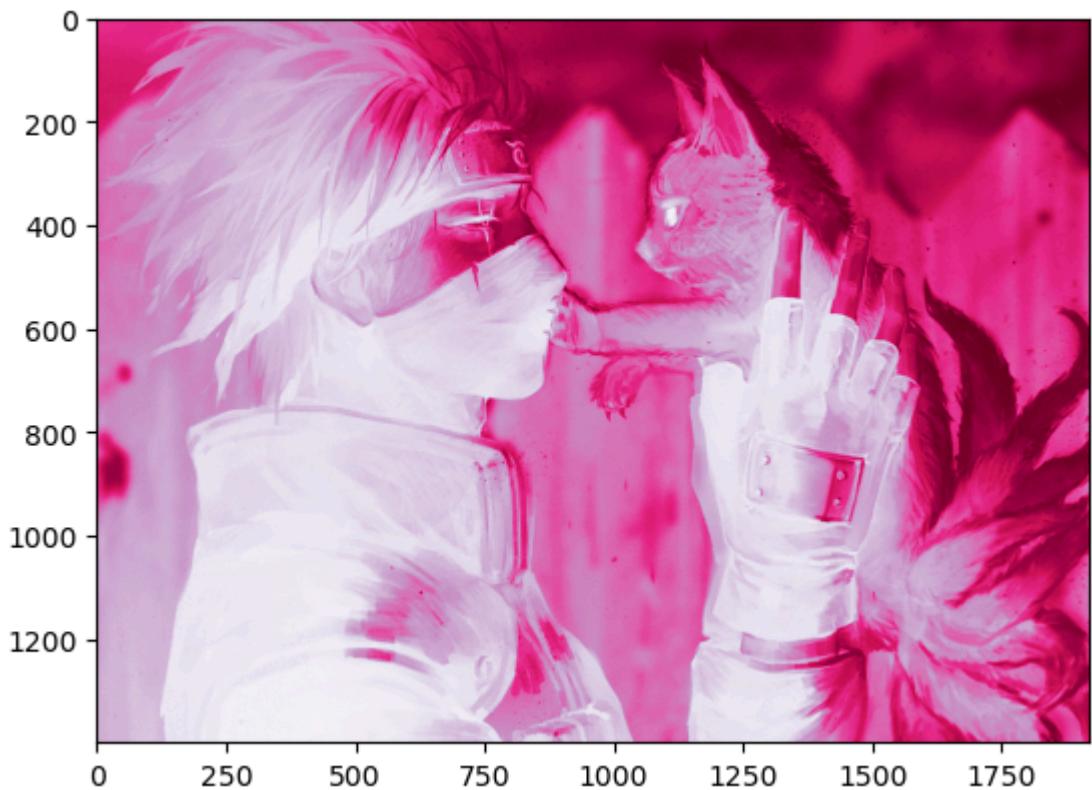
```
In [39]: plt.imshow(Kakashi_red[:, :, 0], cmap = 'OrRd')
```

```
Out[39]: <matplotlib.image.AxesImage at 0x29ea0132e10>
```



```
In [40]: plt.imshow(Kakashi_red[:, :, 0], cmap = 'PuRd')
```

```
Out[40]: <matplotlib.image.AxesImage at 0x29ea1aaae10>
```



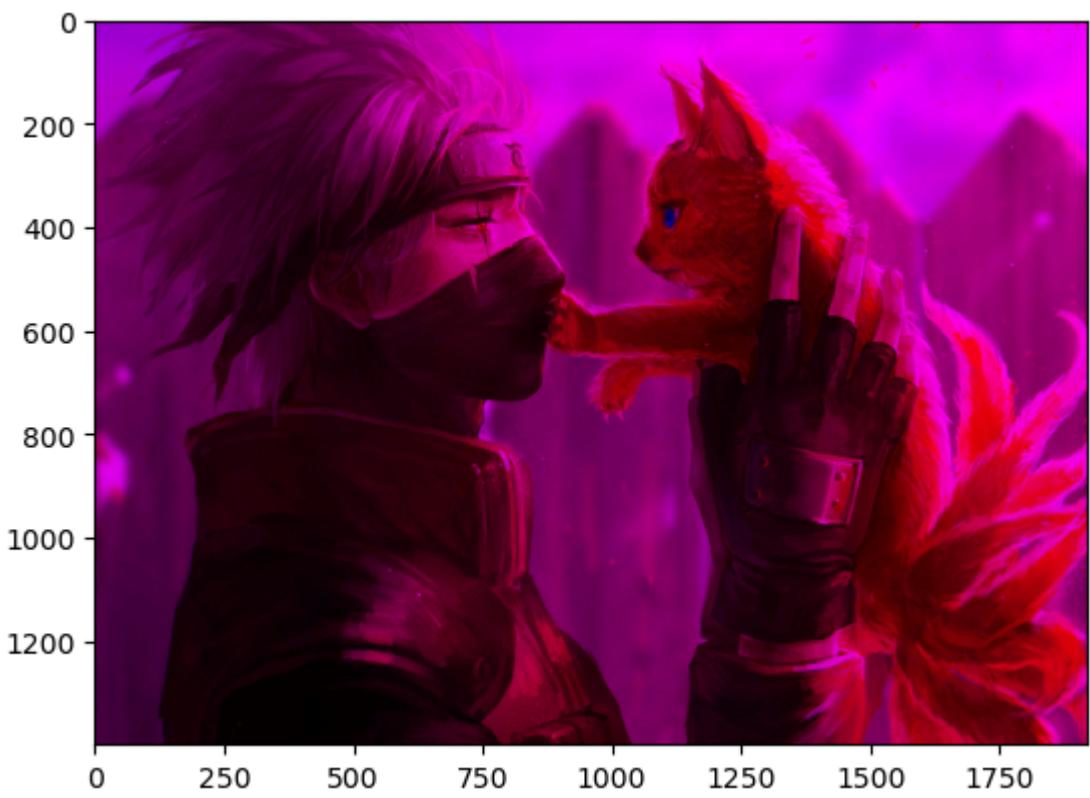
```
In [41]: Kakashi_red[:, :, 0]
```

```
Out[41]: array([[159, 159, 159, ..., 247, 248, 249],  
   [159, 159, 159, ..., 247, 248, 249],  
   [158, 158, 159, ..., 245, 247, 248],  
   ...,  
   [ 70,  70,  71, ..., 179, 179, 178],  
   [ 71,  71,  72, ..., 178, 178, 177],  
   [ 73,  73,  73, ..., 177, 177, 177]], dtype=uint8)
```

```
In [42]: Kakashi_red[:, :, 1] = 0
```

```
In [43]: plt.imshow(Kakashi_red)
```

```
Out[43]: <matplotlib.image.AxesImage at 0x29ea1b37d10>
```



```
In [44]: Kakashi_red[:, :, 2] = 0
```

```
In [45]: plt.imshow(Kakashi_red)
```

```
Out[45]: <matplotlib.image.AxesImage at 0x29ea25f2e10>
```



```
In [46]: Kakashi_red[:, :, -1] = 0
```

```
In [47]: plt.imshow(Kakashi_red)
```

```
Out[47]: <matplotlib.image.AxesImage at 0x29ea2670d90>
```



```
In [48]: Kakashi_red[:, :, -2] = 0
```

```
In [49]: plt.imshow(Kakashi_red)
```

```
Out[49]: <matplotlib.image.AxesImage at 0x29ea014c950>
```



```
In [50]: Kakashi_red[:, :, -2] = 0
```

```
In [51]: plt.imshow(Kakashi_red)
```

```
Out[51]: <matplotlib.image.AxesImage at 0x29ea36b9090>
```



```
In [ ]:
```