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

In [2]:
```
#image analysis using numpy
```

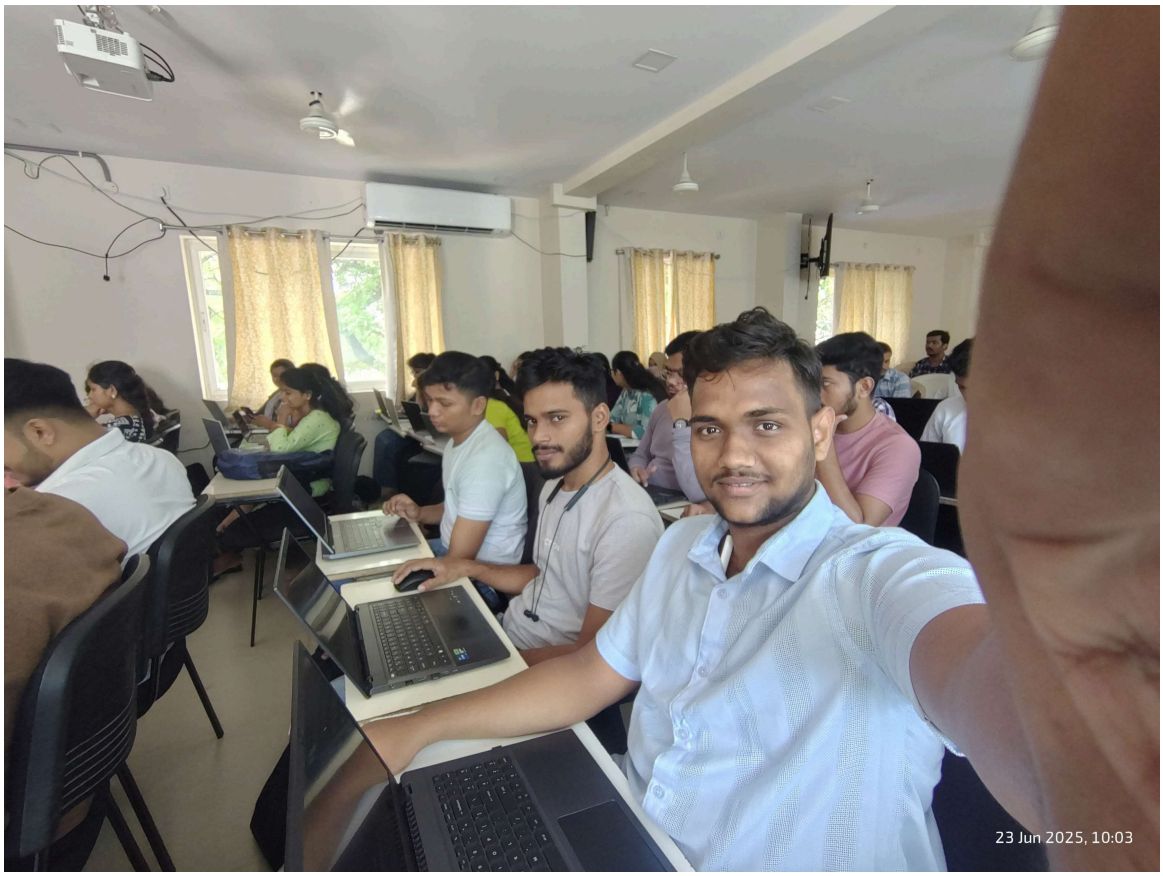
In [3]:
```
import matplotlib.pyplot as plt
```

In [4]:
```
from PIL import Image# python image library
```

In [5]:
```
img=Image.open(r'C:\Users\sachi\Desktop\WhatsApp Image 2025-06-23 at 10.09.00 AM
```

In [6]:
```
img
```

Out[6]:



In [7]:
```
myimg=Image.open(r'C:\Users\sachi\Desktop\20241018_083258.jpg')
myimg
```

Out[7]:

In [8]:
```
from PIL import Image
```

In [9]:
```
%matplotlib inline
```

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

Out[10]:
```
PIL.JpegImagePlugin.JpegImageFile
```

In [11]:
```
myimg1=np.asarray(myimg)
myimg1
```

Out[11]:
```
array([[[184, 187, 194],
        [184, 187, 194],
        [186, 189, 196],
        ...,
        [114,  90,  90],
        [ 94,  76,  76],
        [ 75,  63,  63]],

       [[188, 191, 198],
        [187, 190, 197],
        [186, 189, 196],
        ...,
        [ 85,  64,  63],
        [ 84,  66,  64],
        [ 80,  66,  63]],

       [[186, 189, 196],
        [184, 187, 194],
        [185, 188, 195],
        ...,
        [ 83,  64,  60],
        [ 67,  49,  45],
        [ 80,  67,  59]],

       ...,

       [[188, 189, 194],
        [186, 187, 192],
        [190, 191, 196],
        ...,
        [120, 102,  92],
        [114,  96,  94],
        [128, 112, 115]],

       [[190, 191, 196],
        [187, 188, 193],
        [190, 191, 196],
        ...,
        [142, 122, 111],
        [127, 108, 104],
        [141, 122, 124]],

       [[189, 190, 195],
        [186, 187, 192],
        [190, 191, 196],
        ...,
        [155, 136, 122],
        [138, 117, 112],
        [139, 119, 120]]], dtype=uint8)
```

In [12]:
```
type(myimg1)
```

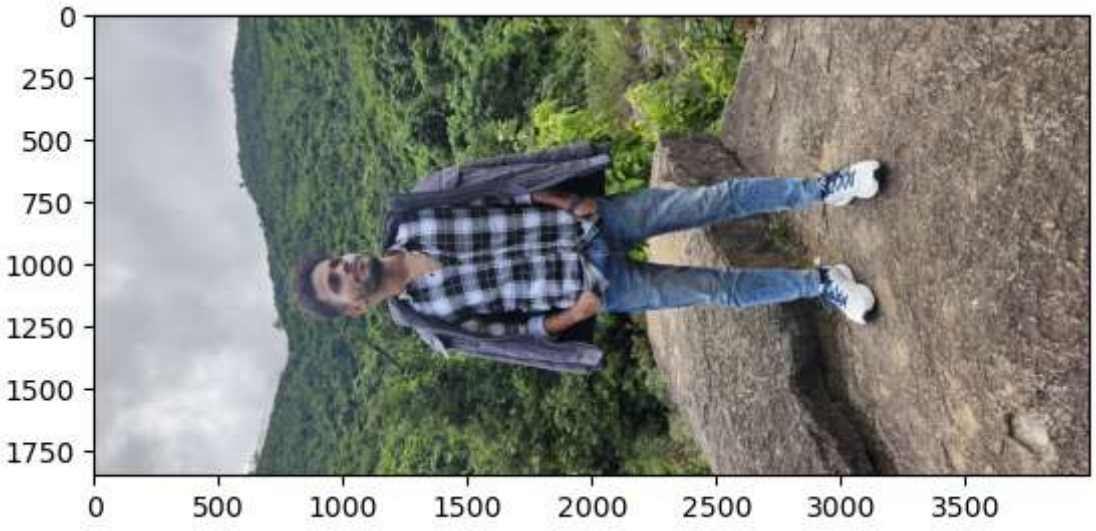
Out[12]:
```
numpy.ndarray
```

In [13]:
```
myimg1.shape
```

Out[13]:
```
(1848, 4000, 3)
```

In [14]:
```
plt.imshow(myimg)
```

Out[14]: <matplotlib.image.AxesImage at 0x218911cced0>



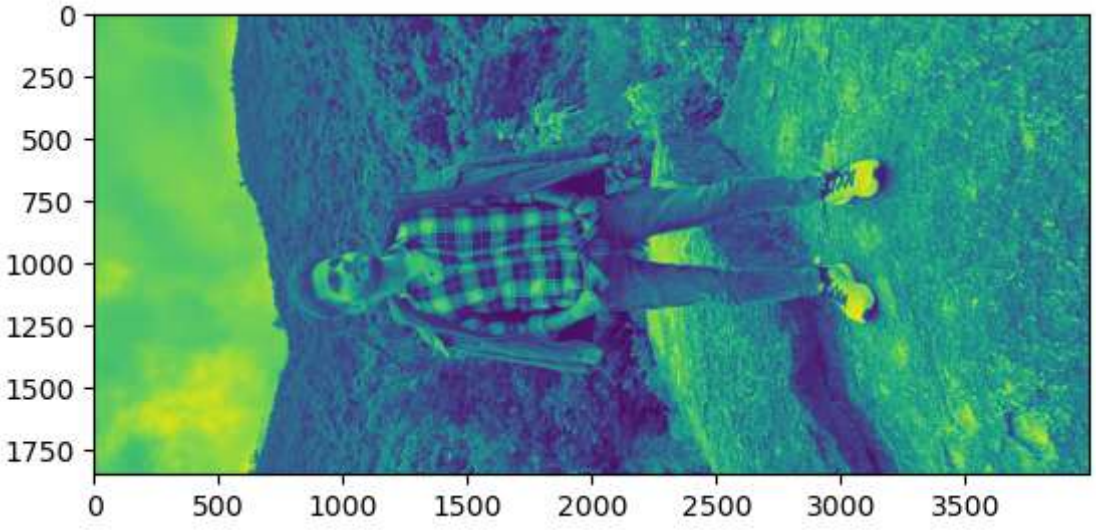
In [15]:
```
myimg_red=myimg1.copy()
```

In [16]:
```
myimg_red.shape
```

Out[16]: (1848, 4000, 3)

In [17]:
```
plt.imshow(myimg_red[:,:,0])
```

Out[17]: <matplotlib.image.AxesImage at 0x21891209ad0>

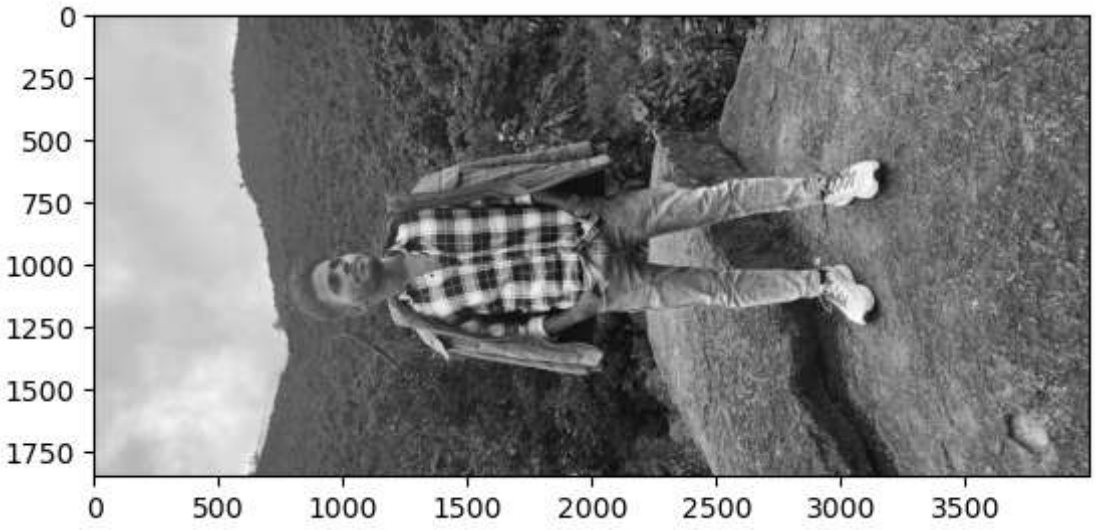


In [18]:
```
myimg_red[:,:,0]
```

Out[18]:
```
array([[184, 184, 186, ..., 114,  94,  75],
       [188, 187, 186, ...,  85,  84,  80],
       [186, 184, 185, ...,  83,  67,  80],
       ...,
       [188, 186, 190, ..., 120, 114, 128],
       [190, 187, 190, ..., 142, 127, 141],
       [189, 186, 190, ..., 155, 138, 139]], dtype=uint8)
```

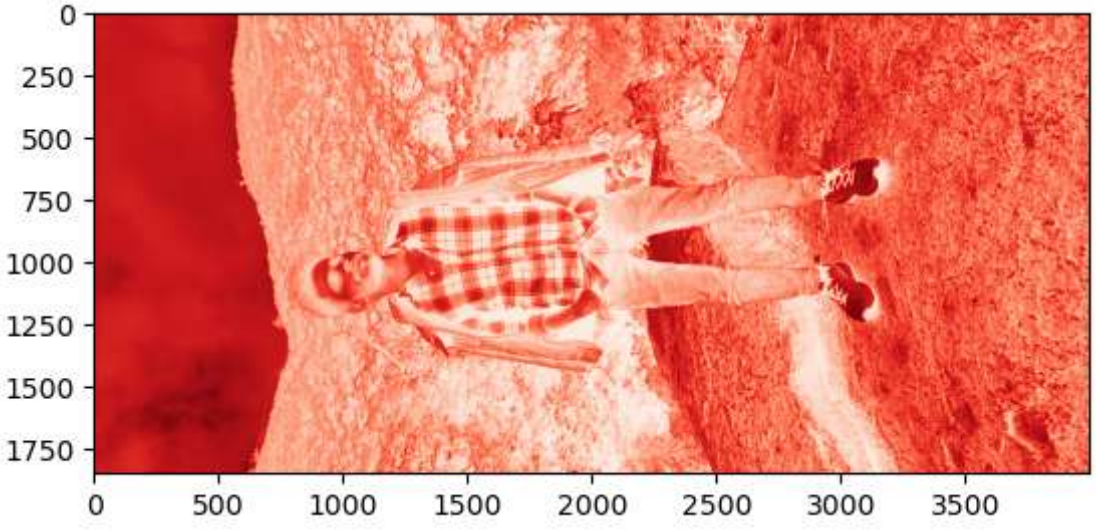
In [38]:
```
plt.imshow(myimg_red[:,:,2],cmap='gray')
```

Out[38]: <matplotlib.image.AxesImage at 0x218a7ac5890>



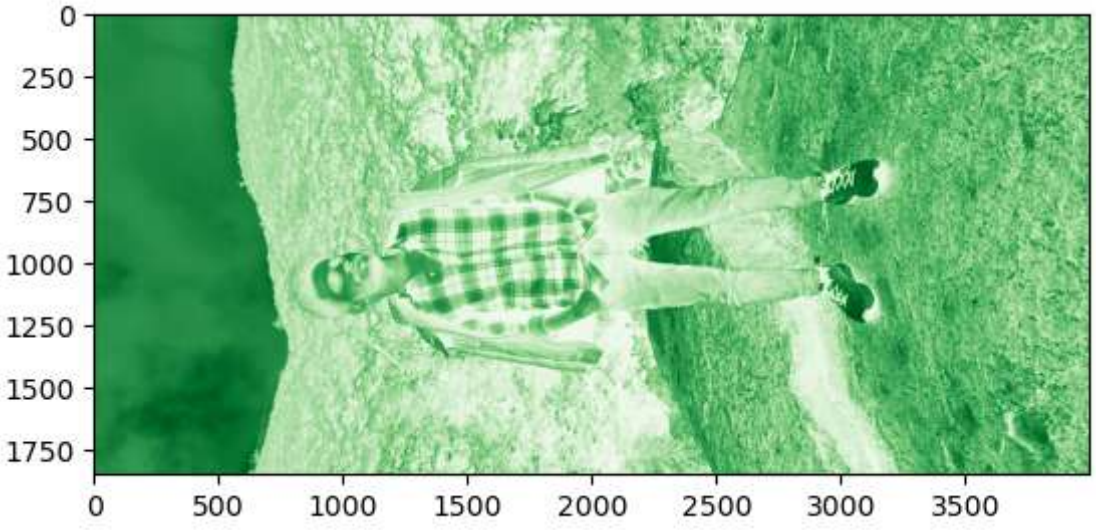
In [33]:
```
plt.imshow(myimg_red[:,:,0],cmap='Reds')
```

Out[33]: <matplotlib.image.AxesImage at 0x218a5a88c10>



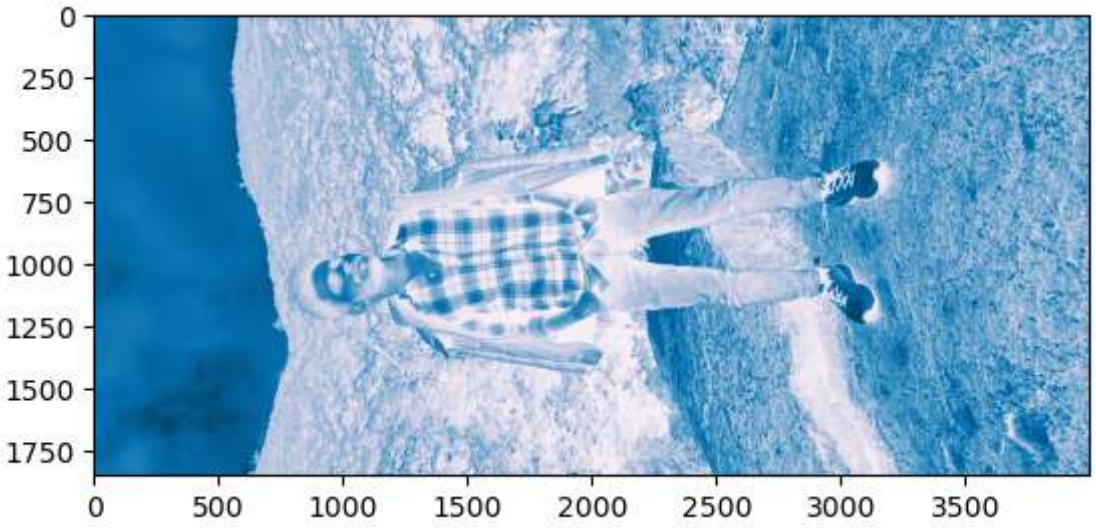
In [32]:
```
plt.imshow(myimg_red[:,:,0],cmap='Greens')
```

Out[32]: <matplotlib.image.AxesImage at 0x218a4bd03d0>



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

Out[36]:
```
<matplotlib.image.AxesImage at 0x218a6417390>
```



In [ ]:

In [ ]:

In [ ]: