TestModel

December 29, 2020

[1]:
```
import torchvision
import torchvision.transforms as transforms
```

[2]:
```
from models.model_architecture import Model
```

[3]:
```
model = Model()
```

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

[5]:
```
import numpy as np
```

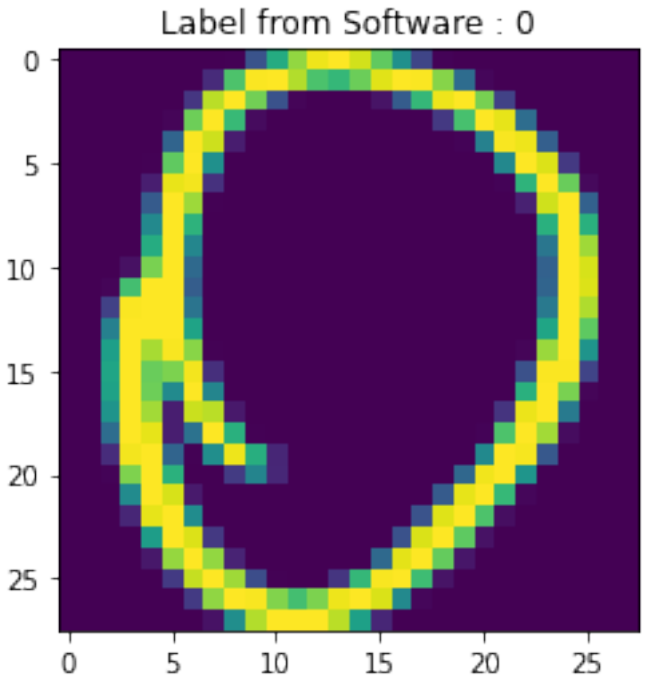
[6]:
```
from PIL import Image
import cv2
```

[7]:
```
def read_digit(path):
    img = cv2.imread(path)
    img = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)

    img = 255 - img
    img = np.abs(img)

    row_sum = img.sum(axis=1)
    col_sum = img.sum(axis=0)

    x_min = 0
    for i in range(len(col_sum)):
        if col_sum[i] > 255 :
            x_min = i
            break

    x_max = img.shape[1]
    for i in range(len(col_sum)-1, 0, -1):
        if col_sum[i] > 255 :
            x_max = i
            break

    y_min = 0
```

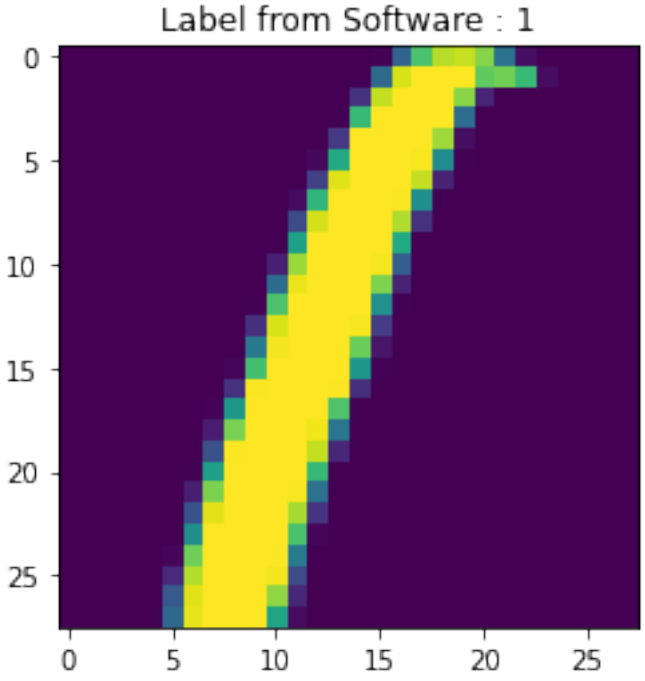
```
    for i in range(len(row_sum)):
        if row_sum[i] > 255 :
            y_min = i
            break

    y_max = img.shape[0]
    for i in range(len(row_sum)-1, 0, -1):
        if row_sum[i] > 255 :
            y_max = i
            break
    space = 10
    if x_min >= space :
        x_min -= space
    if x_max + space < len(col_sum):
        x_max += space
    c_img = img[y_min:y_max, x_min:x_max]

    c_img = cv2.resize(c_img, (28,28), interpolation = cv2.INTER_AREA)
    return c_img
```

[8]:
```
for i in range(10):
    file = f'test_data/test_digit_{i}.png'
    print("read from file", file)
    digit_img = read_digit(file)
    result = model.predict(digit_img.reshape((1,1,28,28)))
    plt.title(f'Label from Software : {result[0]}')
    plt.imshow(digit_img)
    plt.show()
```

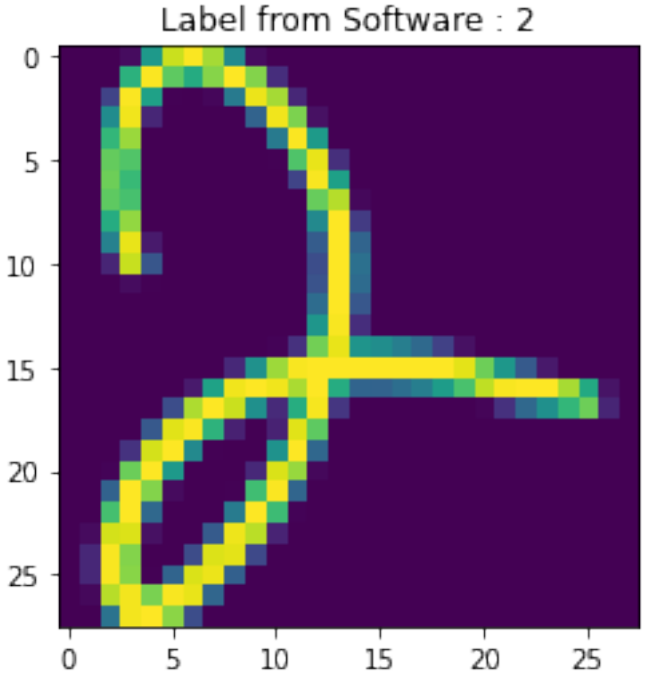
```
read from file test_data/test_digit_0.png
```



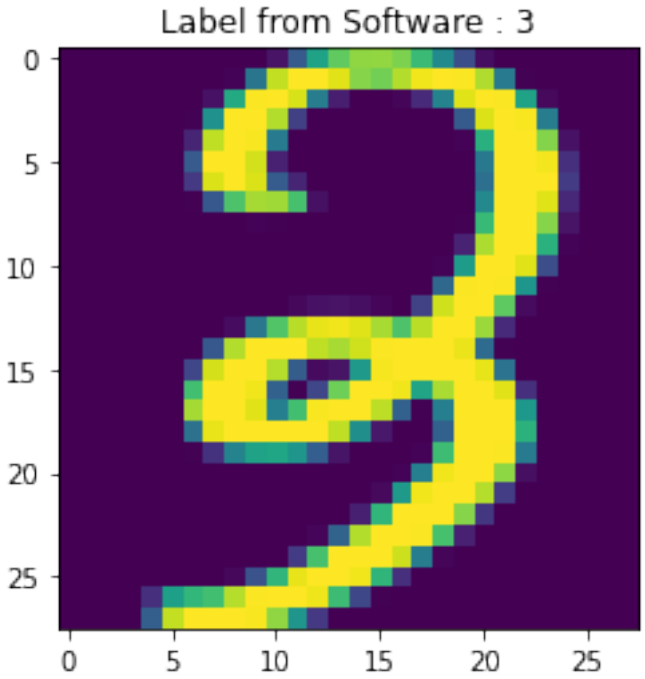

```
read from file test_data/test_digit_1.png
```



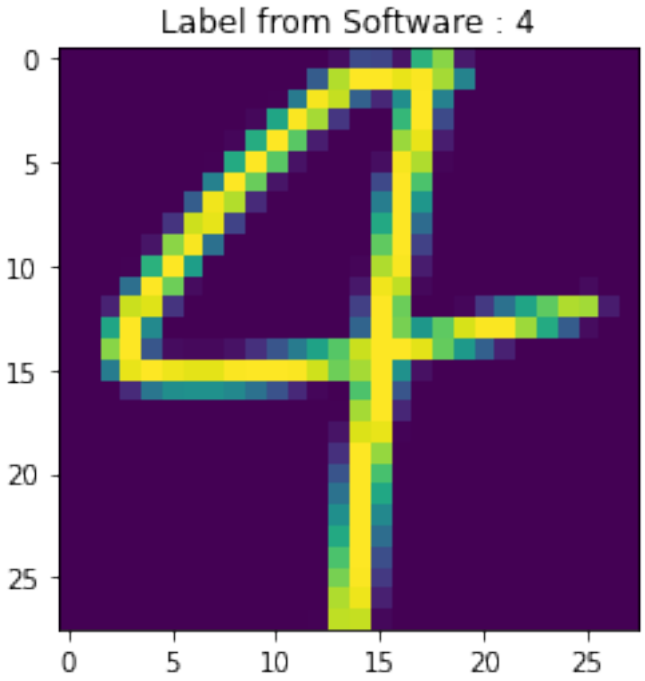
```
read from file test_data/test_digit_2.png
```



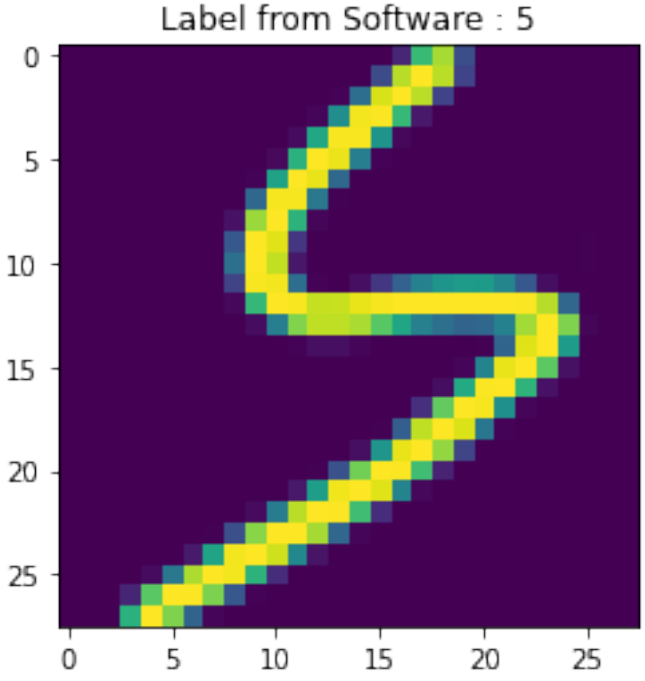

```
read from file test_data/test_digit_3.png
```



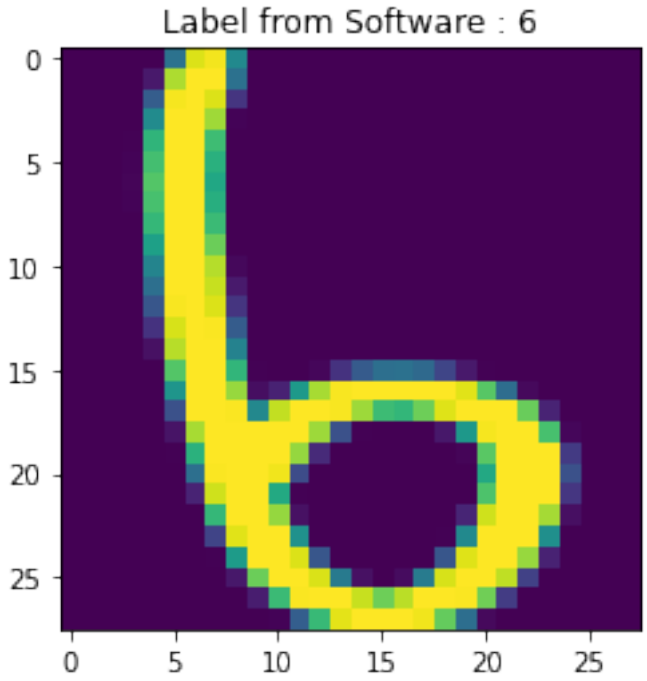
```
read from file test_data/test_digit_4.png
```



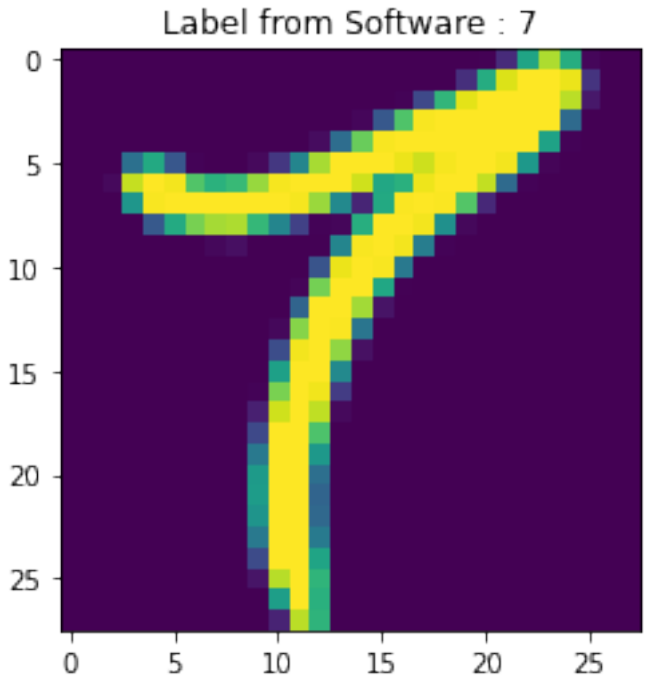

```
read from file test_data/test_digit_5.png
```



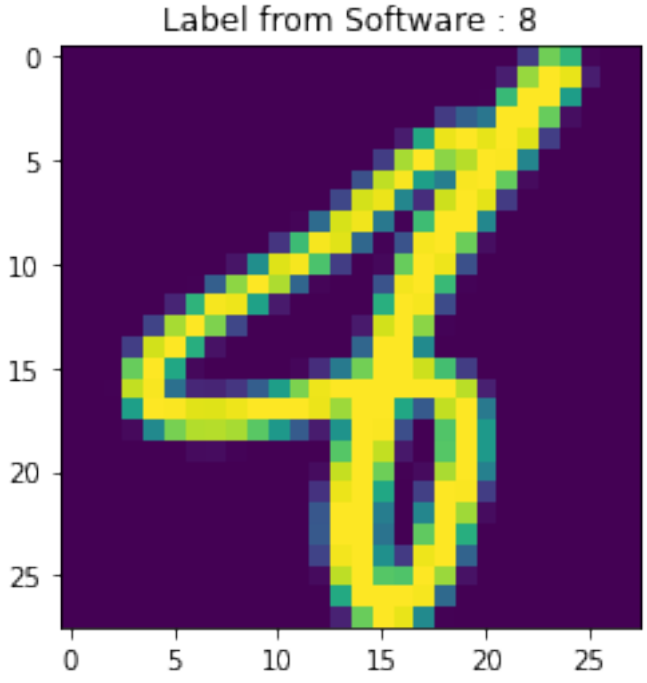
```
read from file test_data/test_digit_6.png
```



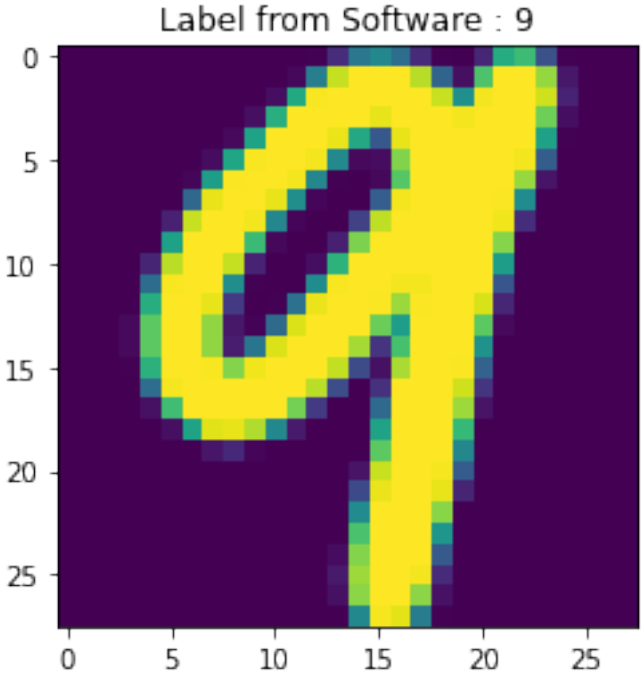

```
read from file test_data/test_digit_7.png
```




```
read from file test_data/test_digit_8.png
```



```
read from file test_data/test_digit_9.png
```



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