Programming Assignment: Logistic Regression with a Neural Network mindset

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Deadline Pass this assignment by September 24, 11:59 PM PDT

Assignment: Logistic Regression with a Neural Network mindset

model() output

Riken Maharjan Assignment: Logistic Regression with a Neural Network mindset · a month ago

When I print out the accuracy of my model. The answers are totally different from the expected 99% and 70% . I got 100/100 in this assignment but still accuracy doesn't match up. Any help?

My test accuracy was mere 34%. And train was 91%

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FK

Feraz Kian · a month ago · Edited

I was very confused too, and did a test for myself to understand the difference. Hope it helps you too.

For the assignment, first I tried my own way of reshape **(Method-1).**

```
a = a.reshape(num_px*num_px*3,m_train)
```

instead of **(Method-2)**

```
a = a.reshape(m_train, num_px*num_px*3).T
```

(let's forget about "-1" that is mentioned in the trick for the time being, it's just a shortcut to calculate the rest of the values for dimension)

Then as I got the same accuracy with you I tried to understand **how "reshape" actually works** and I generated a smaller numpy array of (4,3,3,3), (ie. m_train=4)

```
import numpy as np

a = np.array([
    [
        [
            [1,2,3],[4,5,6],[7,8,9]
        ],
        [
            [10,11,12],[13,14,15],[16,17,18]
        ],
        [
            [19,20,21],[22,23,24],[25,26,27]
        ]
    ],
    [
        [
            [1,2,3],[4,5,6],[7,8,9]
        ],
        [
            [10,11,12],[13,14,15],[16,17,18]
        ],
        [
            [19,20,21],[22,23,24],[25,26,27]
        ]
    ],
    [
        [
            [1,2,3],[4,5,6],[7,8,9]
        ],
        [
            [10,11,12],[13,14,15],[16,17,18]
        ],
        [
            [19,20,21],[22,23,24],[25,26,27]
        ]
    ],
    [
        [
            [1,2,3],[4,5,6],[7,8,9]
        ],
        [
            [10,11,12],[13,14,15],[16,17,18]
        ],
        [
            [19,20,21],[22,23,24],[25,26,27]
        ]
    ]
    ])
```

*(it's like a sample set of 4 identical images, so after reshaping **a**, I expect 4 identical columns of values 1..27)*

Then tried the two methods to see the outcome:

Method-1

```
a = a.reshape((3*3*3,4))
```

the outcome was

```
[[ 1  2  3  4]
 [ 5  6  7  8]
 [ 9 10 11 12]
 [13 14 15 16]
 [17 18 19 20]
 [21 22 23 24]
 [25 26 27  1]
 [ 2  3  4  5]
 [ 6  7  8  9]
 [10 11 12 13]
 [14 15 16 17]
 [18 19 20 21]
 [22 23 24 25]
 [26 27  1  2]
 [ 3  4  5  6]
 [ 7  8  9 10]
 [11 12 13 14]
 [15 16 17 18]
 [19 20 21 22]
 [23 24 25 26]
 [27  1  2  3]
 [ 4  5  6  7]
 [ 8  9 10 11]
 [12 13 14 15]
 [16 17 18 19]
 [20 21 22 23]
 [24 25 26 27]]
```

Method-2

```
a = a.reshape((4,3*3*3)).T
```

the outcome was

```
[[ 1  1  1  1]
 [ 2  2  2  2]
 [ 3  3  3  3]
 [ 4  4  4  4]
 [ 5  5  5  5]
 [ 6  6  6  6]
 [ 7  7  7  7]
 [ 8  8  8  8]
 [ 9  9  9  9]
 [10 10 10 10]
 [11 11 11 11]
 [12 12 12 12]
 [13 13 13 13]
 [14 14 14 14]
 [15 15 15 15]
 [16 16 16 16]
 [17 17 17 17]
 [18 18 18 18]
 [19 19 19 19]
 [20 20 20 20]
 [21 21 21 21]
 [22 22 22 22]
 [23 23 23 23]
 [24 24 24 24]
 [25 25 25 25]
 [26 26 26 26]
 [27 27 27 27]]
```

So basically what we are looking for is achieved by **Method-2**.

The reason Method-2 works is that reshape() does ***Row Major Ordering*** by default (you can change it if you want), i.e. the row index varies the slowest. So we first create a (4,27) shape array and then get the transpose of it to achieve our goal.

You may watch this video for Row Major Ordering illustration and also check this explanation for further information.

1 Upvote Hide 1 Reply

王煦中 · a month ago

Thank you!

0 Upvotes

LN

Reply

Reply

B

Beansi · a month ago

My test accuracy is 34% too, and the train accuracy is also 91%, however, when I change the iteration times to 4000 and 6000, the train accuracy will grow to about 97% and 98%, but the test accuracy still does not change

0 Upvotes Hide 2 Replies

D

DavinciChen · 12 days ago

I got the same problem,do u fix it?

1 Upvote

FC

Favio Augusto Conti · 6 days ago

@DavinciChen i solved , i had wrong paramters in the optimization() call , i was copying and pasting from prev exercise but the learning rate was wrong

0 Upvotes

LN

Reply

Reply

TW

Tao Wang · a month ago

I had the same issue, but I found another explanation -- reshaping problem.

I replaced snippet2 instead of snippet1, and then everything went correctly.

```
# Reshape the training and test examples

### START CODE HERE ### (≈ 2 lines of code)
train_set_x_flatten = train_set_x_orig.reshape(num_px * num_px * 3, m_train)
test_set_x_flatten = test_set_x_orig.reshape(num_px * num_px * 3, m_train)
### END CODE HERE ###
```

```
# Reshape the training and test examples

### START CODE HERE ### (≈ 2 lines of code)
train_set_x_flatten = train_set_x_orig.reshape(m_train, num_px * num_px * 3).T
test_set_x_flatten = test_set_x_orig.reshape(m_test, num_px * num_px * 3).T
### END CODE HERE ##
```

8 Upvotes Hide 2 Replies

AN

Akihiro Nitta · a month ago

I had the exact same issue, too. I've just had it fixed!

Thanks!

0 Upvotes

U

unijoy · 3 days ago

this help me。thanks

0 Upvotes

LN

Reply

Reply

Chouri Soulaymen · a month ago

Hello, I had the same issue, did find a solution?

Thanks!

0 Upvotes Hide 4 Replies

Henrik Strøm · a month ago

It seems the problems in this thread was caused by two different issues:

- make sure you reshape correctly (see the sanity check)
- don't depend on global variables

6 Upvotes

CB

Christian Beermann · a month ago

I think I fixed the reshape issue (picture is displayed properly), but could you be more specific about the global variable issue?

0 Upvotes

Henrik Strøm · a month ago

You should only rely on the data that the functions are given as parameters when they are called.

I think, when you submit, they run some tests with a different data set, so if you get your size of X from earlier in the exercise, they will not match, and it will fail.

2 Upvotes

Nicholas Crook · a month ago

This was my mistake, using global variables caused issues when initializing the dimensions of w

2 Upvotes

LN

Reply

Reply

Simon Li · a month ago

I made a bug in predict function. Mess up in index of array. Actually the hint is already in the comment...

0 Upvotes Reply

Sébastien Attia · a month ago

I found the problem. In the model function, I had a dependency to a global variable. When I removed this dependency I got my 20/20.

4 Upvotes Hide 2 Replies

José Carlos Baquero · a month ago

I had the same problem. Be careful with the global variables when your are testing.

Thanks

0 Upvotes

GL

Geoff Ladwig · a month ago

Thanks, I had the same issue.

0 Upvotes

LN

Reply

Reply

RM

Rui Martins · a month ago

Hi,

I had the issue of having the correct results but a 0/20 in the model step. I was using a global variable (train_set_x) to define the the size of w.

As soon as I replaced that variable with a local function variable the model was accepted.

So please use the functions as self-contained units, otherwise you'll run into issues in the submissions.

RM

4 Upvotes Hide 1 Reply

A

Anastasia · a month ago

I was using num_px instead of using one of the function variables as well, and when I changed it, it made mine pass as well. Thanks!

0 Upvotes

LN

Reply

Reply

Riken Maharjan · a month ago

As xiewanyang said, my reshape had some error. The "insanity test" seem to be incorrect for me. My matrix is transposed version of the real matrix. If I transposed to get pass the insansity test all other parts get error. Any help.

1 Upvote Reply

X

xiewenyang · a month ago

Go back to check ***Section 2 - Overview of the Problem set***, you may make a mistake in exercise part of reshaping data sets.

1 Upvote Reply

Henrik Strøm · a month ago

I also got 34% and 91%, but 0/20 for the model.

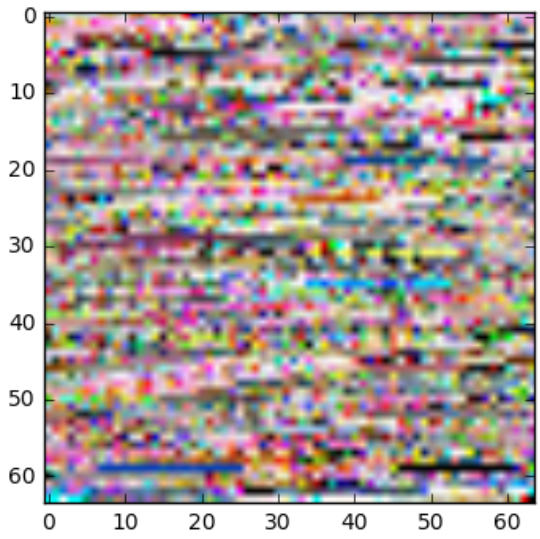
My images looks very strange. After computing train_set_x and test_set_x I did a small test (this is not part of the assignment, so showing this should not violate the honour code, as far as I can tell).

```
train_set_x_inflated = train_set_x * 255

test_set_x_inflated = train_set_x * 255

plt.imshow(test_set_x_inflated[:,20].reshape((num_px, num_px, 3)))
```

This gives me an image like this:



It may be worth checking out if the pictures got messed up.

2 Upvotes Hide 9 Replies

X

xiewenyang · a month ago

Go back to check *Section 2 - Overview of the Problem set. You may make a mistake of reshaping datasets*

0 Upvotes

Henrik Strøm · a month ago

I agree, and I am looking into it. I just thought it was funny I got the same test and train accuracy as Riken Maharjan, so others might have the same problem. Funny thing though, that part of the exercise passes.

0 Upvotes

VK

Vikram Kalabi · a month ago

Can you try casting the values to np.uint8 and display it?

0 Upvotes

Henrik Strøm · a month ago

I found out that my reshape was wrong, even it was the right size. I now get the expected accuracy, but still 0/20 points. No idea why.

0 Upvotes

YAO JIN · a month ago

do you get correct image?

0 Upvotes

Henrik Strøm · a month ago

Yes, my reshaping came out with the right size, but garbled. After I corrected the problem the images came out right.

0 Upvotes

GC

George Croucamp · a month ago

I had the same training/testing accuracy as you and thanks to visualizing an image (using your code snippet) I knew where to look for the bug. Thanks!

0 Upvotes

YAO JIN · a month ago

Here is an explication for my error. Now, I got the expected training and test accuracies.

https://www.coursera.org/learn/neural-networks-deep-learning/discussions/all/threads/1hasP34hEee0lA6ZNA1NMA

0 Upvotes

GeorgeZou · a month ago

So how did you do that?

0 Upvotes

LN

Reply

Reply

P

prashant · a month ago

Same here.. :-(

0 Upvotes Reply

VK

Vikram Kalabi · a month ago

I would check the code for converting probabilities a[0,i] to actual predictions p[0,i].

1 Upvote Hide 2 Replies

Jason Ganz · a month ago

can you give any more insight onto this? I'm 99% sure thats where my problem is but I can't figure out what exactly my issue is

1 Upvote

SE

samuel edeh · a month ago · Edited

This is also where I made a mistake. For some reason, I initially had

```
1   if A[0,i] >= 0: # should be 0.5
2     Y_prediction[0,i] = 1
```

0 Upvotes

LN

Reply

Reply

Sébastien Attia · a month ago · Edited

For me, ilt is the opposite, the answers are the right ones, but I got 0/20 to the model part of the assignment !

Any help ?

4 Upvotes Hide 1 Reply

MA

Mhd Wesam Alnabki · 22 days ago

The problem in the input of initialize_with_zeros function. You should assign the **w** shape from **X_train** instead of **train_set_x**

0 Upvotes

LN

Reply

Reply

LN

Reply

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