edX

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5. Predicting the Test Data

Now fill in the code for the function `predict`, which will use your trained neural network in order to label new data.

You will be working in the file part2-nn/neural_nets.py in this problem

Implementing Predict

5.0/5.0 points (graded)
Available Functions: You have access to the NumPy python library as `np`, `rectified_linear_unit` and `output_layer_activation`

Note: Functions `rectified_linear_unit_derivative`, and `output_layer_activation_derivative` can only handle scalar input. You will need to use `np.vectorize` to use them

```
class NeuralNetwork(NeuralNetworkBase):

    def predict(self, x1, x2):

        input_values = np.matrix([[x1],[x2]])

        # Compute output for a single input(should be same as the forwa

        hidden_layer_weighted_input = self.input_to_hidden_weights * in
```

```
10          hidden_layer_activation = np.vectorize(rectified_linear_unit)(h
11          output = self.hidden_to_output_weights * hidden_layer_activatio
12          activated_output = output_layer_activation(output)  # scalar
13
14          return activated_output.item()
15
```

Press ESC then TAB or click outside of the code editor to exit

Correct

```
class NeuralNetwork(NeuralNetworkBase):

    def predict(self, x1, x2):

        vec_relu = np.vectorize(rectified_linear_unit)

        input_values = np.matrix([[x1],[x2]]) # 2 by 1

        hidden_layer_weighted_input = self.input_to_hidden_weights*input_values
        hidden_layer_activation = vec_relu(hidden_layer_weighted_input) # 3 by

        output = self.hidden_to_output_weights * hidden_layer_activation # 1 by
        activated_output = output_layer_activation(output) # 1 by 1

        return activated_output.item()
```

Test results

See full output

CORRECT

See full output

Submit   You have used 1 of 25 attempts

ⓘ Answers are displayed within the problem

When you're done, run the script and make sure that all of your predictions pass the

test cases.

Discussion

Topic: Unit 3 Neural networks (2.5 weeks):Project 3: Digit
recognition (Part 2) / 5. Predicting the Test Data

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? **Python problem**
[Staff]Please help! I have the same problem here as with the training task. Perhaps your syste...
9

? **[STAFF] Only last test is marked as wrong**
The last test on the grader is being marked as incorrect, but I think there is something wrong ...
7

☑ **[STAFF] Grader marking all submissions incorrect based on an old incorrect submission for the first problem**
3

? **Error in last test case ValueError: can only convert an array of size 1 to a Python scalar**
I didn't see any problem in the code.
3

💬 **rectified_linear_unit() function shown as wrong in 'predict' implementation**
This function has already been evaluated as correct for me. But in def predict(), I am getting t...
6

💬 **Confusion regarding np.vectorize note**
Your note indicates that "Functions rectified_linear_unit_derivative, and output_layer_activati...
2

💬 **[Staff] Accuracy Errors**
My code for predict works for a few of the test cases, but for the rest, the returned values are...
5

? **Issue With Weights Matrix Dimesions**
For the last test case, the weights array for the hidden to output layer is 1-dimensional ([...]) ...
1

💬 **[Staff]Processing... several hours**
Hi! It has been several hours saying "processing" but nothing happened. I passed the "x.test_ ...
3