UDACITY

‹ Return to "Deep Learning" in the classroom

DISCUSS ON STUDENT HUB

Predicting Bike-Sharing Patterns

REVIEW

CODE REVIEW

HISTORY

Meets Specifications

Great work on your project, your project meets all the specifications. Hope this nanodegree will be a great learning experience for you. All the Best 👍

Useful Links :

1. How the backpropagation algorithm works
2. Step by step backpropagation example
3. Learning Curve in ML
4. What does a hidden layer in neural network compute ?

Code Functionality

All the code in the notebook runs in Python 3 without failing, and all unit tests pass.

The sigmoid activation function is implemented correctly

Forward Pass

The forward pass is correctly implemented for the network's training.

Good !! Correctly implemented the sigmoid activation function !! Below mentioned links have interesting stuff on different kinds of activation functions used, their merits and demerits.

Useful Links

- Role of activation function
- Commonly used activation functions
- Comprehensive list of activation functions in neural networks with pros/cons

The run method correctly produces the desired regression output for the neural network.

Backward Pass

The network correctly implements the backward pass for each batch, correctly updating the weight change.

Updates to both the input-to-hidden and hidden-to-output weights are implemented correctly.

Hyperparameters

The number of epochs is chosen such the network is trained well enough to accurately make predictions but is not overfitting to the training data.

Tip

When making a decision on the number of epochs keep these two things in mind:

- Number of epochs should be chosen such that the network is trained well enough to accurately make predictions but is not overfitting to the training data.
- Number of epochs should be such that the loss on the training set is low and the loss on the validation set isn't increasing.

Useful Links

1. Epoch in neural network
2. Choosing the number of epochs

The number of hidden units is chosen such that the network is able to accurately predict the number of bike riders, is able to generalize, and is not overfitting.

The learning rate is chosen such that the network successfully converges, but is still time efficient.

The learning rate of 0.8 is generally very high. It worked in this case, but generally its always better to start with 0.01 and search.

Suggested Reading

1. Cyclical Learning Rates for Training Neural Networks
2. How do you find a good learning rate

The number of output nodes is properly selected to solve the desired problem.

The training loss is below 0.09 and the validation loss is below 0.18.

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