Peer-graded Assignment: Build a Regression Model in Keras

You submitted!
Your work is ready to be reviewed by classmates. You have reviewed enough classmates to receive a grade, but in the meantime, you may review more classmates. We'll email you when your grade is ready. Your grade should be ready by **Jan 16, 12:59 PM PKT**.

Review Classmates' Work

ⓘ It looks like this is your first peer-graded assignment. Learn more ×

Instructions | My submission | Discussions

Building a Regression Model in Keras

Submitted on December 13, 2019 Shareable Link

PROMPT

A. Build a baseline model **(5 marks)**

Use the Keras library to build a neural network with the following:

- One hidden layer of 10 nodes, and a ReLU activation function

- Use the **adam** optimizer and the **mean squared error** as the loss function.

1. Randomly split the data into a training and test sets by holding 30% of the data for testing. You can use the **train_test_split** helper function from Scikit-learn.

2. Train the model on the training data using **50 epochs**.

3. Evaluate the model on the test data and compute the mean squared error between the predicted concrete strength and the actual concrete strength. You can use the **mean_squared_error** function from Scikit-learn.

4. Repeat steps 1 - 3, **50 times**, i.e., create a list of **50** mean squared errors.

5. Report the **mean and the standard deviation of the mean squared errors.**

Submit your Jupyter Notebook with your code and comments.

Peer-graded Assignment: Build a Regression Model in Keras (A)
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PROMPT

B. Normalize the data **(5 marks)**

Repeat Part A **but use a normalized version of the data**. Recall that one way to normalize the data is by subtracting the mean from the individual predictors and dividing by the standard deviation.

How does the mean of the mean squared errors compare to that from Step A?

Peer-graded Assignment: Build a Regression Model in Keras (B)
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PROMPT

C. Increate the number of epochs **(5 marks)**

Repeat Part B **but use 100 epochs this time for training**.

How does the mean of the mean squared errors compare to that from Step B?

Peer-graded Assignment: Build a Regression Model in Keras (C)
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PROMPT

D. Increase the number of hidden layers **(5 marks)**

Repeat part B but use a neural network with the following instead:

- Three hidden layers, each of 10 nodes and ReLU activation function.

How does the mean of the mean squared errors compare to that from Step B?

Peer-graded Assignment: Build a Regression Model in Keras (D)
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