Week 1 Quiz
Graded Assignment • 20 min

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English Due Jan 19, 11:59 PM CST

Your grade: 100%

Your latest: 100% • Your highest: 100%
To pass you need at least 80%. We keep your highest score.

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1. In the context of machine learning, what is convergence? 1 / 1 point

- (●) The process of getting very close to the correct answer
- ( ) An analysis that corresponds too closely or exactly to a particular set of data
- ( ) A programming API for AI
- ( ) A dramatic increase in loss

Correct
That's right! Convergence is when guesses get better and better closing to a 100% accuracy.

2. What is the difference between traditional programming and machine learning? 1 / 1 point

- (●) In traditional programming, a programmer has to formulate or code rules manually, whereas, in machine learning, the algorithm automatically formulates the rules from the data.
- ( ) Machine learning identifies complex activities such as golf, while traditional programming is better suited to simpler activities such as walking.

Correct
Exactly! Machine learning algorithms build a model based on sample data, known as "training data", in order to make predictions or decisions without being explicitly programmed to do so.

3. What does model.fit() do? 1 / 1 point

- ( ) It determines if your activity is good for your body.
- (●) It trains the neural network to fit the inputs to the expected outputs.
- ( ) It makes a model fit the available memory.
- ( ) It optimizes an existing model.

Correct
Correct! The training takes place using the .fit() command.

4. What do we call the process of telling the computer what the data represents (i.e. this data is for walking, this data is for running)? 1 / 1 point

- ( ) Programming the Data
- ( ) Learning the Data
- (●) Labeling the Data
- ( ) Categorizing the Data

Correct
Yes! Labeling typically takes a set of unlabeled data and augments each piece of it with informative tags.

5. What does the optimizer do? 1 / 1 point

- ( ) Decides to stop training a neural network, when an optimal threshold is reached.
- (●) Updates the weights to decrease the total loss and generate an improved guess.
- ( ) Figures out how to efficiently compile your code to optimize the training.
- ( ) Measures how good the current guess is.

Correct
Nailed it! The optimizer figures out the next guess based on the loss function.

6. What is a Dense layer? 1 / 1 point

- ( ) A single neuron
- (●) A layer of neurons fully connected to its adjacent layers
- ( ) An amount of mass occupying a volume
- ( ) A layer of disconnected neurons

Correct
Correct! In Keras, dense is used to define this layer of connected neurons

7. At any time during training, how do you measure how good the current 'guess' of the neural network is? 1 / 1 point

- ( ) Figuring out if you win or lose
- (●) Using the loss function
- ( ) Training a neural network

Correct
Absolutely! An optimization problem seeks to minimize a loss function.

8. When building a TensorFlow Keras model, how do you define the expected shape of the input data? 1 / 1 point

- ( ) No need to, TensorFlow is capable of inferring this for you
- ( ) Setting the `input_shape` argument of a `tf.keras.layers.Dense` or other first layer your model uses
- ( ) Using a `tf.keras.InputLayer` that specifies the shape of the data via the `shape` argument
- (●) Using a `tf.keras.Input` that specifies the shape of the data via the `shape` argument

Correct
Indeed! It is a good practice to define a `tf.keras.Input` as the first element of your neural network so that it has a clearly defined input shape.