1.
Question 1

The diagram for traditional programming had Rules and Data In, but what came out?

1 / 1 point

Bugs

Machine Learning

Answers

Binary

Correct

2.
Question 2

The diagram for Machine Learning had Answers and Data In, but what came out?

1 / 1 point

Models

Rules

Binary

Bugs

Correct

3.
Question 3

When I tell a computer what the data represents (i.e. this data is for walking, this data is for running), what is that process called?

1 / 1 point

Labelling the Data

Learning the Data

Programming the Data

Categorizing the Data

Correct

4.
Question 4

What is a Dense?

1 / 1 point

- [x] A layer of connected neurons
- [ ] Mass over Volume
- [ ] A layer of disconnected neurons
- [ ] A single neuron

Correct

5.
Question 5

What does a Loss function do?

1 / 1 point

- [ ] Figures out if you win or lose
- [ ] Generates a guess
- [ ] Decides to stop training a neural network
- [x] Measures how good the current ‘guess’ is

Correct

6.
Question 6

What does the optimizer do?

1 / 1 point

- [ ] Figures out how to efficiently compile your code
- [x] Generates a new and improved guess
- [ ]

Measures how good the current guess is

Decides to stop training a neural network

Correct

7.
Question 7

What is Convergence?

1 / 1 point

A dramatic increase in loss

The process of getting very close to the correct answer

A programming API for AI

The bad guys in the next ‘Star Wars’ movie

Correct

8.
Question 8

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 one set of values to another

It makes a model fit available memory

It optimizes an existing model

Correct

Week 2 Quiz

LATEST SUBMISSION GRADE

100%

1.

Question 1
What's the name of the dataset of Fashion images used in this week's code?

1 / 1 point

Fashion Tensors

Fashion Data

Fashion MN

Fashion MNIST

Correct

2.
Question 2
What do the above mentioned Images look like?

1 / 1 point

82x82 Greyscale

28x28 Color

28x28 Greyscale

100x100 Color

Correct

3.
Question 3
How many images are in the Fashion MNIST dataset?

1 / 1 point

10,000

70,000

60,000

42

Correct

4.
Question 4
Why are there 10 output neurons?

1 / 1 point

Purely arbitrary

To make it train 10x faster

To make it classify 10x faster

There are 10 different labels

Correct

5.
Question 5
What does Relu do?

1 / 1 point

It returns the negative of x

It only returns x if x is greater than zero

For a value x, it returns 1/x

It only returns x if x is less than zero

Correct

6.
Question 6
Why do you split data into training and test sets?

1 / 1 point

To make testing quicker

To train a network with previously unseen data

To make training quicker

To test a network with previously unseen data

Correct

7.
Question 7
What method gets called when an epoch finishes?

1 / 1 point

on_end

on_epoch_finished

On_training_complete

on_epoch_end

Correct

8.
Question 8
What parameter to you set in your fit function to tell it to use callbacks?

1 / 1 point

callback=

oncallback=

callbacks=

oncallbacks=

Correct

Week 3 Quiz

LATEST SUBMISSION GRADE

100%

1.

Question 1

What is a Convolution?

1 / 1 point

A technique to isolate features in images

A technique to filter out unwanted images

A technique to make images bigger

A technique to make images smaller

Correct

2.

Question 2

What is a Pooling?

1 / 1 point

A technique to combine pictures

A technique to reduce the information in an image while maintaining features

A technique to isolate features in images

A technique to make images sharper

Correct

3.

Question 3

How do Convolutions improve image recognition?

1 / 1 point

They make the image clearer

They make the image smaller

They isolate features in images

They make processing of images faster

Correct

4.

Question 4

After passing a 3x3 filter over a 28x28 image, how big will the output be?

1 / 1 point

28x28

31x31

25x25

26x26

Correct

5.

Question 5

After max pooling a 26x26 image with a 2x2 filter, how big will the output be?

1 / 1 point

13x13

56x56

26x26

28x28

Correct

6.

Question 6

Applying Convolutions on top of our Deep neural network will make training:

1 / 1 point

Faster

Stay the same

It depends on many factors. It might make your training faster or slower, and a poorly designed Convolutional layer may even be less efficient than a plain DNN!

Slower

Correct

tf.keras.layers.Conv2D | TensorFlow Core v2.4.1

tf.keras.layers.Dense | TensorFlow Core v2.4.1

You've seen how to add a convolutional 2d layer to the top of your neural network in the previous video. If you want to see more detail on how they worked, check out the playlist at https://bit.ly/2UGa7uH.

Now let's take a look at adding the pooling, and finishing off the convolutions so you can try them out…

To try this notebook for yourself, and play with some convolutions, here's the notebook. Let us know if you come up with any interesting filters of your own!

As before, spend a little time playing with this notebook. Try different filters, and research different filter types. There's some fun information about them here: https://lodev.org/cgtutor/filtering.html

Kernel (image processing) - Wikipedia

Week 4 Quiz

LATEST SUBMISSION GRADE

100%

1.

Question 1

Using Image Generator, how do you label images?

1 / 1 point

TensorFlow figures it out from the contents

You have to manually do it

It’s based on the directory the image is contained in

It’s based on the file name

Correct

2.

Question 2

What method on the Image Generator is used to normalize the image?

1 / 1 point

normalize

rescale

normalize_image

Rescale_image

Correct

3.

Question 3

How did we specify the training size for the images?

1 / 1 point

The target_size parameter on the training generator

The training_size parameter on the training generator

The target_size parameter on the validation generator

The training_size parameter on the validation generator

Correct

4.

Question 4

When we specify the input_shape to be (300, 300, 3), what does that mean?

1 / 1 point

Every Image will be 300x300 pixels, with 3 bytes to define color

Every Image will be 300x300 pixels, and there should be 3 Convolutional Layers

There will be 300 images, each size 300, loaded in batches of 3

There will be 300 horses and 300 humans, loaded in batches of 3

Correct

5.

Question 5

If your training data is close to 1.000 accuracy, but your validation data isn't, what's the risk here?

1 / 1 point

You're overfitting on your training data

You're underfitting on your validation data

You're overfitting on your validation data

No risk, that’s a great result

Correct

6.

Question 6

Convolutional Neural Networks are better for classifying images like horses and humans because:

1 / 1 point

In these images, the features may be in different parts of the frame

There’s a wide variety of horses

There’s a wide variety of humans

All of the above

Correct

7.

Question 7

After reducing the size of the images, the training results were different. Why?

1 / 1 point

We removed some convolutions to handle the smaller images

There was more condensed information in the images

There was less information in the images

The training was faster

Correct