⚠ This quiz has been regraded; your score was not affected.

General Quiz

- Due Oct 9 at 12pm
- Points 19
- Questions 7
- Available Oct 9 at 11:45am - Oct 9 at 1pm 1 hour and 15 minutes
- Time Limit 15 Minutes
- Allowed Attempts 2

Instructions

This Quiz will cover CNN concepts, Image pre-processing, and questions on the water quality analysis group project

You are expected to complete this quiz within 15 minutes

While it is indicated you have 2 attempts, those 2 attempts should be done within the 15 minute allocated time and if you then decide to do the second attempt your final grade will be an average of the marks from the two attempts.

Attempting the quiz twice is discouraged and only set in place for students who have unwarranted challenges beyond their control

If the question appears ambiguous to you,remember to pick the closest answer depending on the options given for that question

This quiz was locked Oct 9 at 1pm.

Attempt History

	Attempt	Time	Score	Regraded
LATEST	Attempt 1	13 minutes	12 out of 19	12 out of 19

⚠ Correct answers are no longer available.

Score for this attempt: 12 out of 19
Submitted Oct 9 at 11:59am
This attempt took 13 minutes.

Question 1

1 / 1 pts

It is possible to use CNN instead of vanilla Artificial Neural Networks for the water quality analysis model?

- (●) True
- ( ) False

IncorrectQuestion 2

0 / 3 pts

```
from tensorflow.keras.layers import Conv2D
# Example of a convolutional layer
conv_layer = Conv2D(filters=32, # Number of filters (output depth)
    kernel_size=(3, 3), # Size of the convolution kernel
    strides=(1, 1), # Stride of the convolution
    padding='same', # "same" or "valid" padding
    activation='relu', # Activation function
    input_shape=(224, 224, 3)) # Input shape (for the first layer only)
```

Consider the code above.

What will be the number of feature maps? i.e How many features per image will be there adfter a convolutional operation from the convolution layers?

- ( ) 16. With a stride of 1 we can actually cut the number of outputs by half
- ( ) 1,605,632
- (●) 32 because we have 32 kernels and therefore there will be an output of 32 images

Padding = 'same'meaning the size of original image is same as the convolved image. An image has 224*224 features, if we have 32 filters we will have 32 images each of 224*224 so the result is 224*224*32

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Question 3

2 / 2 pts

An image has the shape (224,224,3) later on the shape changes to (224,224,1). what is the most likely reason for this ?

- Downsampling using pooling layers
- Normalization of pixel values.
- Grayscale conversion
- Channel reduction using a convolutional layer with 1 filter

Question 4
2 / 2 pts

ASL referes to american Sign language.

True or False

If I had a dataset based on ASL, during augmentation it is in my best interest to rotate the images as have them as additional samples to my dataset

- True
- False

IncorrectQuestion 5
Original Score: 5 / 5 pts Regraded Score: 5 / 5 pts

This question has been regraded.

Given the image above what would be the maxpooling resulting matrix if:

The kernel Size is (3,3)

the stride is (3,3)

There is zero padding done on the original image

[70] - with a stride of 3 we are unable to move right or go down because the image size after a stried the edge pixels are less than the kernel size

- [20, 30, 112, 37]
- [30, 0, 112, 12]
- [70, 4, 112 ,12]

The resulting matrix after applying max-pooling with a kernel size of 3x3 and a stride of 3x3, with padding, is:

[70 4]
[112 12]

Incorrect

Question 6

0 / 4 pts

Which of the following operations are invalid in processing a dataset that has missing/ NaN values such as the water quality dataset done in the group assignment?

(select two)

- [x] Fill all missing values with entire column feature standard deviation
- [ ] Fill with mean of the entire column feature
- [x] pandas.DataFrame.dropna(water_quality_dataset_dataframe)
- [ ] Fill with mean per class i.e for class 0 fill with mean of class 0

Question 7

2 / 2 pts

True or False

During Sessions with the coach, it was discovered that loss should be below 1. Based on the water quality project in groups, all groups had a loss falling below 1. This indicates the models are performing okay despite low Accuracies ranging between 60% -70%. i.e We should be satisfied with that loss

- ( ) True
- (•) False

Quiz Score: 12 out of 19