

TensorFlow 4 - Using Max Pooling Layers in TensorFlow

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Lesson 3: CNNs in TensorFlow
Section 5. Quiz: Max Pooling Layers

0.0.1 Instructions

Set up the strides, padding and ksize such that the output shape after pooling is (1, 2, 2, 1).

```
In [2]: '''
        Set the values to `strides` and `ksize` such that
        the output shape after pooling is (1, 2, 2, 1)
        '''

import tensorflow as tf
import numpy as np

### tf.nn.max_pool requires the input to be 4D (batch_size, height, width, dept)
# (1, 4, 4, 1)
x = np.array([
    [0, 1, 2, 3],
    [4, 5.5, 6, -8],
    [9.1, 10, 11, -12],
    [13, 14, 15.5, 16]], dtype = np.float32).reshape((1,4,4,1))
X = tf.constant(x)
# print(X.shape) # (1, 4, 4, 1)

def maxpool(input):
    # Set the ksize (filter size) for each dimension (batch_size, height, width, depth)
    ksize = [1,2,2,1]
    # Set the strides for each dimension (batch_size, height, width, depth)
    strides = [1,2,2,1]
    # Set the padding, either 'VALID' or 'SAME'
    padding = 'VALID'
    return tf.nn.max_pool(input, ksize, strides, padding)

out = maxpool(X)
print(out.shape)

(1, 2, 2, 1)
```