**CS5720 Neural network and Deep learning**

**Spring 2025**

**Quiz1. For Chapter 3**

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**Submission Requirements:**

* Once finished your Quiz, submit it on the BB.
* No handwriting accepts.
* No late submission accepts

1. **Multiple Choice Question (50 points)**

**Instructions:** Select the correct answer. Each question is worth **10 points**.

1. What is the default execution mode in TensorFlow 2.x?
   1. Graph Execution
   2. Eager Execution
   3. Static Execution
   4. Deferred Execution

Answer**: Graph Execution**

1. Which function is used to reshape a tensor in TensorFlow?
   1. tf.reshape()
   2. tf.transpose()
   3. tf.expand\_dims()
   4. tf.reduce\_mean()

Answer: **tf.reshape()**

1. What does @tf.function do in TensorFlow?
   1. Converts a function into a computational graph
   2. Runs operations immediately in eager mode
   3. Disables GPU acceleration
   4. Optimizes Python functions for multi-threading

Answer: **Converts a function into a computational graph**

1. What is the primary use of TensorBoard?
   1. Training deep learning models
   2. Storing model checkpoints
   3. Visualizing and monitoring model training
   4. Optimizing computational speed

Answer : **Visualizing and monitoring model training**

1. Which command is used to launch TensorBoard from a notebook?
   1. %tensorboard --logdir logs/
   2. tensorboard.start()
   3. launch\_tensorboard()
   4. tensorflow.visualize()

Answer**: %tensorboard --logdir logs/**

1. **Short Answer Questions (20 points)**
2. What is the function of tf.reshape()?

Answer: tf.reshape() function in Tensorflow is used to change the shape of a tensor without altering its data

Purpose and Functionality:

tf.reshape() serves to reorganize the elements of a tensor into a new shape. This operation: Maintains the total number of elements in the tensor Preserves the order of elements Does not modify the underlying data.

Key features:

1.Flexibility

2.automatic size interference

3.contiguous memory

Usage example tf.reshape():

import tensorflow as tf

original = tf.constant([1, 2, 3, 4, 5, 6])

reshaped = tf.reshape(original, [2, 3])

print(reshaped)

Output :

tf.Tensor(

[[1 2 3] [4 5 6]],

shape=(2, 3), dtype=int32)

1. **Fill-in-the-Blank (Code Completion) (30 points)**
2. Please write print result.

import tensorflow as tf

tensor = tf.constant([3, 6, 9])

result1 = tensor + 3

result2 = tensor / 3

print(result1.numpy())

print(result2.numpy())

Answer:

[6, 9, 12]

[1., 2., 3.]