Try again once you are ready

Grade received 79.16% To pass 80% or higher

Try again

High-Performance Modeling

Total points 6

1. True Or False: In the model parallelism, the models are replicated into different devices (GPU) and trained on data batches. **0 / 1 point**

- (•) True
- ( ) False

Incorrect
Not quite! In the model parallelism, the process occurs differently. In this way, when the models are too large to fit in a single device, then it can be distributed among many devices.

2. Which of the following terminologies are often used in the world of distributed computing? (Select all that apply) **0.75 / 1 point**

- [x] Worker

Correct
That's right! The term worker is very common and is defined as the accelerator on which some calculations are performed, as in this replica.

- [x] Mirrored Variable

Correct
That's right! When you copy the same variables in the model to multiple devices, they are called mirrored variables. Training methodologies keep these variables in sync across various devices.

- [x] Copy

This should not be selected
Not quite! During the model training, it is necessary to make copies of the model's variables on several devices. This copy in the world of distributed computing is known as a replica.

- [x] Device

Correct
That's right! The term device is very commonly used to refer to a CPU or an accelerator like a GPU or TPU on any physical machine which runs machine learning models during different stages of its life cycle.

3. True or False: The pipeline performance can be optimized through parallelizing data extraction and transformation. **1 / 1 point**

- (•) True
- ( ) False

Correct
That's right! Parallelizing processes, like data extraction or data transformation or both, is a way to accelerate your pipeline performance.

4. True or False: TensorFlow offers techniques to optimize pipeline performance like prefetching, parallelizing data extraction and transformation, caching and reducing memory. These techniques are available through the **sklearn.decomposition** API. **1 / 1 point**

- (•) False
- ( ) True

Correct
That's correct! The API incorporating prefetching, parallelizing data extraction and transformation, caching and reducing memory is **tf.data**.

5. True Or False: As important developments in both model growth and hardware improvement have been made, parallelism becomes an alternative of greater importance. **1 / 1 point**

- (•) True

False

Correct
That's correct! Even in recent years the size of machine learning models has been increasing, hardware accelerators (like GPUs and TPUs) have also been growing, but at a slower pace.

6. The _____ library uses synchronous mini-batch gradient descent for training in a distributed way. **1 / 1 point**

- (•) GPipe
- ( ) Scipy
- ( ) Scikit-learn
- ( ) Pandas

Correct
That's right! This distributed machine learning library allows you to make partition models across different accelerators and automatically splits a mini-batch of training examples into smaller micro-batches in a distributed way.